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The changing governance of UK animal health policy

1997-2008

Adam Spencer, BA, MA

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Abstract

Animal health problems such as Bovine Spongiform Encephalopathy and foot and mouth disease caused significant problems for government in the last two decades of the twentieth century. The ministry responsible for animal health policy, MAFF, was replaced by a new department, Defra, which was given a wider role than simply agriculture and farming, and claimed that it would work in a new, more open and transparent way, with wider stakeholder participation.

This thesis evaluates this claim and, in particular, asks how far Defra has adopted a way of working consistent with the ideas of 'new governance.' It argues that Defra does work in a new governance manner but that this approach is applied inconsistently in the animal health policy sector. Two recent animal health policies – the Animal Health and Welfare Strategy (AHWS) and the bovine tuberculosis strategy serve as case studies to illustrate the argument. The empirical work - interviews, observation and document analysis examines how Defra delivers these policies in practice. A policy network model is then used to examine and explain the extent of network change over time.

Key findings are that a distinctive new governance approach can be seen in the case of the AHWS. However, in the case of bovine TB, the lack of stakeholder consensus has limited the opportunity for partnership working, stakeholder participation and open policy making.

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Chapter 1: Introduction

'Animal disease outbreaks can have a major impact on animal welfare, human health, farmers, the wider rural economy and the environment. Experience has also demonstrated how expensive they can prove to the taxpayer too' (Defra 2003a, p.2). These opening words of the executive summary of the Department for the Environment, Farming and Rural Affairs' (Defra) veterinary surveillance strategy contain echoes of past policy problems that had dogged Defra's predecessor, the Ministry of Agriculture, Fisheries and Food (MAFF). Concerns about animal welfare had arisen from the serious outbreak of foot and mouth disease (FMD) in 2001, bovine spongiform encephalopathy (BSE), and Salmonella spp. infections. Human health had been affected by outbreaks of Salmonella spp. in eggs, E.coli O-157 in beef, and by variant Creutzfeldt-Jakob Disease (vCJD) caused by eating beef from cattle with BSE. The 2001 FMD outbreak caused tremendous stress to farmers, and had a significant deleterious impact on other rural enterprises, especially tourism. BSE and FMD had also resulted in large bills for the Treasury both in compensation payments to farmers (though not to other affected businesses), and during the FMD outbreak, to contractors to implement the controversial control measures employed to rid the country of the disease. Maintaining high standards of animal health has thus presented government with a number of problematic and costly policy issues in recent years.

MAFF came to be regarded as part of the problem and was replaced after the 2001 General Election by a new department, the Department for the

Environment, Food and Rural Affairs (Defra). However, Defra ought not to be seen simply as a response to these animal health problems. Rather, its creation should be seen as a response to a variety of drivers for change. These drivers are discussed in detail in chapters three and four. Chief among them was a move away from traditional patterns of government and administration along the lines of the 'Westminster model' towards a more complex governance arrangement where both public and private sector actors have important roles and where the line between the public and private becomes blurred. These new arrangements are commonly referred to as 'new governance.' Under new governance the appropriate role of the state comes into question, and becomes significantly altered. Whereas previously the state shouldered the burdens of policy making and implementation (doing the 'rowing' of policy as well as steering it), new governance measures are intended to improve the efficacy of government by widening the role of stakeholders and reducing the state's responsibility for implementation, while retaining the capacity to 'steer' the process (Osborne and Gaebler 1993).

This thesis investigates how one government department, Defra, has translated the ideas of new governance in one small policy area, animal health, in terms of both new policies and institutions of governance. It asks the question, how different from MAFF is Defra in animal health policy? The central argument of this thesis is twofold: Defra did adopt a policy making style that can be accurately characterised as consistent with new governance ideas, thus marking a break with MAFF. However, in the specific case of animal health policy the process has not been uniform. While good examples of new

governance policy, institutions and working can be found, so too can features of old governance.

This introductory chapter has four aims. First, it seeks to explain the rationale for this research. Second, there is a brief overview of the changing nature of farming in the rural economy. Third, the specific research questions that underpin this study are given and, finally, there is an outline of the structure of the thesis.

RATIONALE FOR THE RESEARCH

The origin of this research lies in personal experience. For thirteen years to 2000 I worked for MAFF; for eleven of them at a MAFF Veterinary Investigation Centre, a diagnostic laboratory that provided scientific support to practising veterinary surgeons. I watched the unfolding story of the 2001 Foot and Mouth (FMD) outbreak knowing that friends and former colleagues would be directly and severely affected. During my time in MAFF there had not been a FMD outbreak; indeed there had not been a major outbreak since 1967-68. The response to the outbreak of the disease puzzled me. Why was there so much culling? Why was vaccination not part of the original plan?

That personal experience of working in the animal health field and my interest in animal health raised questions from a political science perspective. Defra appeared to be a different department to MAFF – more wide-ranging in its responsibilities and, following MAFF's experiences with BSE and FMD, committed to a more open way of doing business. This led to the first and most

central question: is Defra different to MAFF in its approach to animal health policy?

BSE, FMD, Salomella in eggs, E-coli O-157 had all caused MAFF considerable difficulties. One problem for government that has arisen from these high profile animal health problems is that public confidence and trust in government use of science has been severely dented. MAFF was a small department, with few policy actors aside from the civil servants and the National Farmers' Union. Its primary objective was the promotion and protection of British agriculture in keeping with the productivist ethos of the department identified below. Indeed, such was the limited nature of the policy network around agriculture that MAFF became known as ' the paradigm case of a closed policy community' (Smith 1993). Scientific advice was sought and given under conditions of secrecy; any internal debates were normally hidden from public view. It was this closed policy making environment that came under pressure most particularly in the aftermath of BSE where advice given to the public was ultimately shown to be optimistic or just plain wrong. Advice that British beef was safe to eat as BSE posed no risk to human health was based not on clear scientific evidence to support the claim, but by concerns about the nature of public reaction to an admission of any uncertainty as to the risk to humans. Indeed, the Phillips Inquiry, set up in the aftermath of the crisis to examine government handling of the problem found that 'The Government was preoccupied with preventing an alarmist overreaction to BSE' (Phillips of Worth Matravers 2000).

However, throughout the BSE and FMD stories, government insisted that its policies were guided by science. Thus during BSE, government was advised by the Tyrell and Southwood Committees and later by the Spongiform Encephalopathy Advisory Committee (SEAC). Handling of the FMD outbreak in 2001 was carried out by the Prime Minister and his Chief Scientific Adviser, David King, advised by various groups of epidemiologists. Policy again was presented as having the backing of 'science'. However, it is clear that the chosen policy for FMD was not the only option that had support from science (Taylor 2003; Woods 2004a; Woods 2004b). In other words, the term 'science' was used inaccurately to suggest the existence of one correct, and true answer to complex policy problems. From this it can be seen that problems existed both within the MAFF based policy making structure and, more widely, in the government use of science which led to difficulties in maintaining and securing public trust in science-based decision making.

Government response to these problems has had to address these two difficulties. First, what institutional changes were required to meet the challenge of the wider rural economy and the generation and implementation of animal health policy that would reduce the possibility of expensive problems in the future? Second, how could the process of policy making be altered in such a way that the outputs of the process enjoyed public acceptance?

One of the first things that the government chose to do was change the structure. Responsibility for food safety was separated from responsibility for

food production in recognition of the distinction between the interests of consumers and producers. Food safety was placed in the hands of an arms length agency, the Food Standards Agency (FSA), while responsibility for farming and animal health policy was vested in a new department, Defra, whose remit became far wider than narrow farming interests. The issue of public acceptance of science based policy making was addressed by replacing the old MAFF approach which sought consensus among a restricted set of elites, with a model that made claims for openness and transparency across a wider range of stakeholders. The new model was applied not only for animal health policy, but also across government departments. Indeed, these ideas of openness and transparency became a feature of policy making across the European Union, particularly where regulation was concerned.

However, these new arrangements have, in various studies, been seen to have presented new problems. The use of the precautionary principle in the EU has led to an increase in uncertainty rather than a reduction in the case of GM crops (Levidow 2001) and continuing problems around legitimacy in GM crops (Levidow, Carr and Wield 2005). A desire to encourage public participation in risk management has suffered from a lack of a 'blueprint' for how that could be done, resulting in 'considerable cultural inertia within the scientific and policy community' (Frewer and Salter 2002, p.143). In the case of a proposal on stem cell research, 'the traditional reliance on scientific authority was, apart from necessary parliamentary debate, total' (Frewer and Salter 2002, p.144). A study of the FSA's inquiry into the possible risks of BSE in sheep found that the potential benefits of stakeholder participation did

not ‘necessarily produce more democratic or robust policy than closed processes’ (Rothstein 2004, p.857) and that existing resource-rich groups were better placed to frame both the issues and conclusions (Rothstein 2004, p.876). Finally, the new model of regulatory decision making was found to have ‘teething troubles’ in terms of avoiding selection bias in participants, avoiding amplification of risk, and building trust among stakeholders (Lofstedt 2004).

Despite these problems identified in other studies, so far, specific studies of animal health policy as presently being produced and implemented by Defra have not been carried out. The justification for studying animal health policy is thus twofold. Firstly, it is justified by the contrast offered between the old consensual model of policy making seen under MAFF and the new model of Defra whose policies for animal health articulate a desire for greater openness and transparency. Secondly, it is justified by a desire to understand how the new governance model is working in this particular policy area.

AGRICULTURE IN CONTEXT

Farming, like other economic enterprises, does not exist in a vacuum. It is conducted with regard to the structural confines both of the local and international marketplaces for its produce and under regulatory regimes derived from both the British government and by the European Union (EU). It also conducts its activities in particular spaces, rural spaces, and its needs compete with those of other interests in what is now a quite complex rural economy. Indeed, the very notion of ‘the rural’ is a concept open to different

interpretations and constructions (Ilbery 1998). To conduct a study of animal health policy as though it existed solely as the consequence of scientific debate into the "best" policy, or as the result of consensus or conflict within the animal health sub-sectoral policy community would give only a partial and inadequate view. Consequently, a brief look at the historical development of agriculture, at least during the twentieth century, is required. In addition, the place of agriculture within the wider rural environment, its relative importance and status, needs to form part of this story. Providing this historical and contemporary context will help demonstrate how developments in animal health policy can be seen as part of a larger process of rural change.

At the beginning of the 1930s, British agriculture was in a poor state, at 'the nadir of the agricultural depression that began with the onset of overseas competition in the 1870s' (Martin 2000, p.8). Britain was then a country that produced less than 40% of its food requirements; the substantial deficit being filled by imports from commonwealth and other foreign producers (Martin 2000, p. 2). Nevertheless, in the 1930s, agriculture was by far the most important element of the rural economy. Indeed, it 'was more or less synonymous with the state of the rural economy' (Martin 2000, p. 2). State involvement in the agricultural sector was limited, largely confined to preventing food adulteration and in promoting scientific research (Martin 2000, p. 6).

The exception to this general rule in the pre-second world war period were the Great War years. Although agriculture at this time was labour intensive, the

demands of the armed forces on manpower removed many workers from the fields. In addition, food prices rose by 35% by 1915 compared to the pre-war level (Beveridge 1928 quoted in van Zwanenberg and Millstone 2005, p. 43). The War Government had little choice but to act. It created the Ministry of Food in 1916 and the new ministry instigated a policy of state intervention in agriculture which 'effectively reversed the repeal of the Corn Laws' (van Zwanenberg and Millstone 2005, p. 43). The new measures included:

- a guaranteed minimum price for domestically produced wheat
- a guaranteed minimum wage for agricultural workers
- a freeze on rents for farm workers
- controls on the acreage that could be used for cultivating crops and for livestock, and
- the elaboration of a bureaucracy for the administration of those controls (van Zwanenberg and Millstone 2005, p. 43).

These measures were continued in the immediate aftermath of the war. Indicating the apparent importance of protecting farming interests the 1920 Agriculture Act required government to give four years' notice of its intention to abolish the price controls established during the war. However, the 1920 Act was repealed at the end of the post war economic boom. In the economic downturn of the late 1920s, the repeal of the Act resulted in falling prices and a reduction in the amount of land used for arable farming (Martin 2000, p. 6).

While the importance of the Second World War for the re-emergence of government intervention in agriculture and the establishment of a powerful policy community ought not to be underestimated, Martin sees 1931 also as a significant watershed in the development of Britain's agriculture policy. The Agriculture Marketing Acts of 1931 and 1933 established the Marketing Board (MMB). Incidentally, Winter states that these Acts were passed during the time of the second Labour government (Winter 1996, p.91), yet by 1931 the party had suffered the 'Great betrayal' of MacDonald who formed a National Government. However, the Milk Marketing Board was established in 1933 and sought to increase milk consumption and to regulate the price for milk. Martin notes that the prospect of a regular cheque from the MMB made dairy farming appear 'a lucrative and stable activity in comparison with other options' (Martin 2000, p. 24). However, the Marketing Boards could not buck the general economic trend for agriculture. Like much of the rest of the economy in the 1930s, agriculture remained in recession. Winter argues that at the beginning of the Second World War, British agriculture had slumped such that it provided only one third of its food requirements and that between the wars, 'the UK agricultural area had fallen by 2.5 million acres to just over 31.5 million acres, of which nearly 60% was in permanent pasture' (Winter 1996, p.88). Van Zwanenberg and Millstone see, at this time, interest from doctors in addressing the problems of malnutrition, and quote the then President of the British Medical Association, Lord Horder, as locating this within the problem of food production (van Zwanenberg and Millstone 2005, p. 44).

A number of authors thus agree that while the Second World War marks the point at which state intervention in agriculture becomes institutionalised, the inter-war years saw developments emerging from the economic slump of the time which prepared the ground for formalised state involvement in agriculture (Marsden et al 1993, Winter 1996, Martin 2000, van Zwanenberg and Millstone 2005). War once again made agricultural production a high priority. State intervention in the agricultural sector was required to boost production. Guaranteed prices for farmers were used as a tool to increase production together with a policy to bring more land into agricultural use. The National Farmers' Union (NFU), which before the war was beginning to experience an increase in influence, came to be seen as a major partner of government in delivering the objective of increased food production. Government too, 'was experiencing the advantages of working closely with a representative farming organisation in the development of policy' (Winter 1996, p. 101). These features came together to develop the post war agricultural settlement.

Marsden et al (1993) have described the post war settlement as a 'productivist' regime, and see it as characterised by five pillars of policy. Tennant farmers were given security of tenure for life by the Agricultural Holdings Act 1948. 'This placed the seal on the ascendancy of productive capital (represented by the National Farmers' Union – NFU) over landed capital (represented by the Country Landowners' Association – CLA)' (Marsden et al 1993, p. 59). Second, the 1947 Town and Country Planning Act granted farming a pre-emptive claim over the use of rural land. Marsden et al argue that this also enabled MAFF to achieve a dominant position with respect to rural land use,

giving it powers to watch over other agencies with an interest in the rural environment - such as National Parks Authorities - to ensure that their policies met the needs of agriculture (Marsden et al 1993, p.59). Third, it is generally held that the 1947 Agriculture Act gave farmers financial security by establishing a system of negotiated annual reviews of prices for staple products (Marsden et al 1993, Smith 1993, Marsh and Smith 2000). Fourth, the position of the NFU became institutionalised within the policy network granting political primacy and security to farming interests. This influence was based not on the economic power of the NFU, but rather 'from effective organisation in the context of a politically prescribed partnership between government and the farming community' (Marsden et al 1993, p. 60). Lastly, the post war settlement was based upon an ideological orientation founded upon a common outlook between the NFU and MAFF, together with food processing interests. This common outlook was largely based upon a consensus view that production was the most important consideration in agricultural policy (Marsden et al 1993).

The post war settlement gave power to emerging groups in the food industry and was able to integrate them into the consensus view that ever increasing production was the number one goal of policy. However, it would be incorrect to assume that the MAFF view was unchallenged. The 1970s and 1980s saw the development of critical responses to the productivist approach to agriculture. Chapter three examines in detail the challenge of the political New Right to the general style of British policy making. This challenge can be summed up as a range of measures operating under the label of New Public

Management (NPM). While this was very important in undermining and eventually bringing to an end the MAFF dominated agriculture policy community and provoking both institutional change and change in the use of science by government, the significance of New Right thinking here is that in holding to a belief in the operation of free markets as the best economic arrangement, New Right ideas can be seen as a challenge to the interventionist basis of the post war settlement expressed both in domestic British agricultural policy and in the then European Economic Community's agricultural policy through the Common Agricultural Policy. As such they represented a political challenge to that consensus.

Smith argues that structural factors were more important than political factors in challenging the post war settlement (Smith 1990, p.179). In an early hint of what would develop into his (in collaboration with Marsh) dialectical model of policy networks, Smith argues that 'political factors operate within structural constraints and that to understand their impact it is important to understand the context within which they operate' (Smith 1990, p.184). Smith identifies three structural factors: 'the level of overproduction; the cost of the CAP; and the international agricultural situation' (Smith 1990, p.179).

Food is a product for which, despite growing levels of obesity, there is relatively inelastic demand. Thus if incomes double, the demand for food does not also double. Higher incomes may alter the type of foods bought, but the overall quantity demanded alters little. Thus there comes a point at which further expanding production results in unsold surplus. This point was reached

in Europe in the 1980s leading to the infamous food mountains in EEC stores. This overproduction was the consequence of a combination of high CAP prices encouraging farmers to produce more and improved agricultural technology affording greater yields per hectare of land (Smith 1990, p.180). In a situation of overproduction, a policy encouraging even more production struggles to gain acceptance beyond an inner circle of present beneficiaries.

Another significant structural development during the twentieth century has been a decline in the importance of farming relative to other spheres of economic activity to the rural economy. By 2003, agriculture accounted for only 3% of rural employment yet accounted for 84% of government spending on rural areas (Hill 2005, p.17). In addition, Britain was no longer faced with the problems of food shortages that occurred in the immediate post war period which led both to the recognition of the NFU as a partner in delivering increased production and to the institutionalisation of government intervention in agriculture, with increased production the primary objective of policy – an objective that MAFF achieved. Indeed, 'It has presided for forty years over the most consistent and conspicuous success story in British industry' (Hennessy 1990, p.444).

A consequence of the declining significance of agriculture in economic terms has been that arguments justifying agriculture having its own ministry weakened in strength. The incoming Labour Government of 1997, self anointed as 'modernising', were drawn into rural policy through a combination of factors as diverse as the increasing cost of agricultural subsidy, perceptions

of failure in MAFF as an institution (Chapter three), the hunting debate, and broader policy concerns such as rural transport, environmentalism, housing, education and rural social exclusion (Ward and Lowe 2007). While the 2001 FMD crisis may reasonably be seen to mark the end of the MAFF policy community, the forces arguing for change were already gathering strength.

RESEARCH QUESTIONS

The claim and promise of Defra was that it would manage animal health policy in a new way. Important features of the new approach would include stakeholder participation in open and transparent decision making, consultations, and evidence-based policy making. Animal health policies emerging from Defra envisaged new structures and processes to facilitate these new processes.

This brings us to the over-arching question of this research:

> Is Defra policy-making qualitatively different to that of MAFF? If so, how, and in what ways, do governance structures and processes reflect that difference?

These questions address two important aspects of the transition from one model of policy making to another. The aim is to identify the success of stakeholders in gaining access to animal health policy making actors and structures, and to examine the variety of advice, including that from

stakeholders, that Defra calls upon in the development and implementation of its animal health policies.

This thesis adopts a case study approach, explained in chapter two, using the Animal Health and Welfare Strategy (AHWS) and bovine tuberculosis (bTB) as the two cases. The AHWS offers the opportunity to investigate a wide-ranging and long term strategic approach to achieve a broad policy outcome, namely animal health. The bTB case has the advantage of being a more limited issue, but it is one characterised by debate over the use of science and a mix of competing interests from within as well as outside the farming community. In addition, so far as the question of culling badgers as a control measure is concerned, the room for compromise among stakeholders is limited. Badgers are either culled or not. This case study approach leads, logically, to two additional questions specific to the particular cases.

> How have the new governance structures created by the AHWS worked in practice? How do stakeholders participate in the policy process?
>
> Has Defra effectively deployed new governance measures to resolve the problems posed by competing interests and uncertain science to produce policy on bovine tuberculosis?

The first of these questions allows an assessment to be made of how far the claims of the new policies are borne out in practice. Have they resulted in

significant stakeholder participation, and have those stakeholders been drawn from beyond traditional producer interests? Have the outcomes of policy been significantly different in practice to those that might have been expected during the MAFF era?

The second of these questions focuses on bovine tuberculosis, a disease characterised by differences between stakeholders and differences in the interpretation of the available scientific evidence.

TB in cattle is a serious condition for the farmer as a diagnosis places upon the farm restrictions and a rigorous and time consuming testing regimen. The majority of farmers believe that an important wildlife reservoir of infection is the badger, and have pressed for some years for a policy of badger culling to protect their herds from infection with the disease. A number of reports looking at the disease have been published (Defra 2004b; Defra 2004c; Defra 2004d) which examined the possible role of badgers in the disease. The situation is not, however, straightforward. 'How we tackle the threat from the wildlife reservoir in GB, in particular badger populations, is scientifically complex' (Defra 2004b, p.5 my emphasis). In addition, some conservation groups are resolutely opposed to a culling policy and deny any special role for badgers in the disease transmission. Bovine TB represents an animal health issue where there is ongoing scientific controversy and competing interests within the wider Defra governed policy network. The issue represents an interesting case study within animal health policy which requires scientific

input, and where policy making is played out within an ostensibly more open model.

STRUCTURE OF THE THESIS

Having introduced the policy areas for study and stated the research questions, it is time to set out the structure of the thesis. Each chapter makes a contribution toward supporting the thesis and investigating the associated research questions.

Chapter two discusses the design of the research and addresses questions of methodology and methods used to produce the work. The reasons behind key decisions such as choice of cases and methods are discussed. In addition, governance can be understood through use of an organising framework. A policy network approach is used in this research and, in particular, the Marsh and Smith dialectical model. This chapter therefore discusses this model, and policy networks more generally by reference to the literature.

Chapter three examines MAFF and the old model of policy making for animal health and the reasons why it came under pressure. It is interesting to note that an earlier governance initiative, namely ideas associated with New Public Management is shown to be important in reducing MAFF's own capacity for surveillance and reach into the farming community, together with causing uncertainty and fear about market testing and privatisation. Particular animal health policy problems, BSE and FMD are analysed to illustrate the workings

of the old model of policy making and partially explain why MAFF was replaced by Defra. Crucially, this brought to an end the old policy community centred upon a close relationship between MAFF and the National Farmers' Union. This chapter's contribution to the thesis is to explain the structures and policies that Defra has sought to transcend. To explain how Defra is different to MAFF, it is necessary to understand MAFF first.

Chapter four considers Defra as the successor to MAFF. Important similarities and differences between the two are identified. Defra is seen to be the institutional apparatus of the new, more open policy making model. The central objective of this chapter, however, is to critically analyse Defra's new set of animal health polices, especially the policies that form the basis of the two case studies, but also more broadly. This chapter contributes to the broad thesis by explaining how Defra sees itself as being different to MAFF.

Chapter five covers the case study on the Animal Health and Welfare Strategy. It looks at the results of the empirical work undertaken on this case and contributes to the thesis by offering evidence to show how themes such as stakeholder participation, partnership working and cost and responsibility sharing have worked in practice. In addition, the chapter considers the functioning of the England Implementation Group as a new governance structure.

Chapter six looks at the case study of bovine tuberculosis. As a significant point at issue in this case is the interpretation of the scientific evidence, space

is given over to a detailed discussion of the science of bTB. Part of the New Labour modernising ethos was to respect the science and create evidence-based policy. As will be seen, bTB offered a serious test of that commitment. As with chapter five, there is then a report of the findings of the empirical research undertaken into this case. This chapter contributes to the thesis as a whole by showing that contra the example of the implementation of the AHWS, bTB is characterised by a more closed policy style. Furthermore, 'evidence' in this case has been constructed to include the opinion of stakeholders as much as available scientific findings. This undermines claims of evidence based policy making. In addition, this chapter shows how industry attitudes on this one disease can present a significant and potentially insurmountable problem for Defra, and that bTB may come to be a cause of policy failure not just in respect of bTB, but for the larger AHWS project.

Chapter seven adopts a more theoretical approach and uses the policy network model directly to try to explain policy change. The role of the three relationships identified by Marsh and Smith are each discussed in turn. This chapter contributes to the thesis by showing the importance of resources to actors within the network, the effect of outcomes on the network as well as the importance of both endogenous and exogenous factors in producing policy change. This chapter, as well as providing a theoretical 'lens' through which to analyse animal health policy, also serves as an important test of the utility of the dialectical model.

The final chapter brings together the work of the previous chapters, reviews the evidence gathered and provides answers to the research questions that support the arguments of the thesis. Findings are discussed, conclusions are drawn and speculation on future direction of animal health policy is attempted, including discussion of some extremely recent developments in both the bTB and AHWS cases. Finally, some possibilities for future research in the field are identified.

Chapter 2: Research design and process

Within social science what can be said about a phenomenon is determined to a very large extent by how the phenomenon was studied. Choice of methodology and method, and the design of the research serve to shape the form of knowledge that can be derived. The purpose of this chapter is to explain and justify the research decisions that were taken and how those decisions contributed to, or limited, what the broader thesis says about governance and the use of science in animal health policy.

The chapter is divided into four sections. Section one discusses how and why the two case studies were chosen. This section also explains the choice of methods and data collection that were made. Section two introduces the analytical frameworks used in this study, the governance literature, the Marsh and Smith model of policy networks and Bevir and Rhodes' writing on the interpretive approach to political science. Section three considers the process of interviewing, the two episodes of participant observation, and the episodes of observation of meetings of the England Implementation Group. Again, key decisions such as the one not to return for a second spell at VLA North, and not to interview farmers are explained. Finally, section four looks at analysis, what was done to and with the collected data.

RESEARCH DESIGN

In chapter one, the rationale for studying animal health policy was given. Animal health policy problems had given MAFF significant difficulties from the late 1980s onwards, with salmonella in eggs, BSE and FMD all presenting government with expensive problems. Defra, MAFF's successor, claimed to do policy differently with an emphasis on openness, stakeholder participation and partnership working. How might this work out in animal health policy?

A case study approach quickly suggested itself as Defra had issued a number of new strategies in the animal health field. Reflecting my own experience in the VLA, veterinary surveillance was an early candidate. The Veterinary Surveillance Strategy used the language of governance and promised a new role for science, fitting in well with a broader government commitment to evidence based policy making. However, on closer inspection, this case did not seem sufficient on its own. For one thing, it was a sub-strategy of a wider policy document, the Animal Health and Welfare Strategy (AHWS). The AHWS is filled with the language of new governance and, in addition, proposed the creation of a new type of governance institution, the England Implementation Group. So, rather than the Veterinary Surveillance Strategy, it was the AHWS that lent itself as a case study. However, consideration of Defra's use of science in animal health policy still suggested that the surveillance strategy was a good one to look at. Therefore, the decision was taken to include a section on surveillance within the broader AHWS case study.

With the AHWS decided upon, a second case that suggested itself was bovine tuberculosis. The Government strategic framework for the sustainable control of bovine tuberculosis (bTB) in Great Britain – henceforth the bTB strategy - is, like the Veterinary Surveillance Strategy a sub strategy of the AHWS. The case of bTB is characterised by conflict rather than consensus on the right way forward, especially on the thorny question of the role of badgers in the disease. On the face of it, this disease ought to be amenable to scientific solution. Yet, in practice, both sides of the badger debate have used scientific argument and evidence in support of their case. In addition, farming unions were committed to a culling policy. How far would or could Defra resist these demands if the evidence suggested that a cull was not a good policy? Would governance of this policy be new governance, stakeholder and partnership, or more like old MAFF, less open, less transparent? Would there be a strong contrast with the AHWS and might it be the case that Defra was different to MAFF only some of the time for some animal health policy areas?

Methods

Having decided upon a case study approach, the next decisions were concerned with how to study them. In terms of methodology, a qualitative approach was quickly decided upon. For this study, a qualitative methodology offered the benefits of a 'thick description' of new governance as it has worked out in practice in the animal health policy field and also the possibility of providing space for actors to give their understanding of what is going on and to compare this with what the policies say ought to happen.

Within a qualitative methodology, a variety of methods can be used to obtain data. The two case studies lent themselves to a mixed approach of policy analysis, interviews and observations both in the context of the VLA but also of meetings of the EIG.

Each case study has, as its beginning, a policy document. These documents were carefully analysed to tease out themes and to detect similarities and differences between them. Interviews form a major element in data collection for this research and it was necessary to decide which actors to interview. The first group was Defra policy makers. Senior civil servants, including the CVO and deputy CVO as well as the then minister for animal health were identified as important actors. The VLA was a second group of interest. The reasoning here was that the VLA as a science based organisation would be a good site to see changes in the use of science. Interviews with senior VLA managers and at the two VLA centres visited would add useful context to any observed data. Both of these groups of Defra actors would also be able to tell the story in their own words. Practice vets were chosen because they constitute a major group of users of Defra animal health services. Did they think Defra was different to MAFF? Was it better or worse? Were they aware of the new policies and what they might mean for them and their clients?

A third set of methods selected were observation and participant observation. Observation of EIG meetings was quickly decided upon as it offered the opportunity to observe the new governance in action in a forum deliberately designed to be different. Notes made at EIG meeting were supplemented by the

published minutes on Defra's web site. Participant observation at VLA labs was chosen in order to see Defra science in action, to see what was different 'on the ground' in rural areas far from London.

ANALYTICAL FRAMEWORK

Having determined the cases to be studied and the methods to study them, a further decision needed to be taken on how to frame the analysis. The ideas of new governance underpin some of Defra's claims for its animal health policies and so new governance, used as an organising framework (Stoker 1998) offered a good starting point. However, on its own, new governance is arguably too vague a term to serve on its own; a degree of order was required. The policy network literature is often associated with ideas of governance and so a framework of policy network analysis suggested itself. My previous work had used Marsh and Smith's dialectical model to analyse BSE and FMD and found that the model was a useful tool of analysis (Spencer 2004). Other studies had also come to the same conclusion (Toke and Marsh 2003). Finally, in discussing Defra's animal health policies and the work of the EIG I was concerned to give space to the language and discourses of the actors themselves. This approach is shared by the interpretive approach of Bevir and Rhodes (2003, 2006) who seek to 'identify the ways in which individuals construct governance' (Bevir and Rhodes 2003, p.6). This section examines the literature on governance, policy networks including a description of the features of the Marsh and Smith model, and a brief discussion of the interpretive approach adopted by Bevir and Rhodes.

Governance

That the word governance is open to a multiplicity of meanings is quickly evident to anyone who cares to browse through some of the books published recently on the topic. Many begin with a chapter where the author(s) consider what it is that should be understood by the term (Pierre 2000, Pierre and Peters 2000 and Kjaer 2004 being three examples). What is clear is that in the modern context governance is not simply a synonym for government, it is different from that. For Rhodes, governance 'signifies a change in the meaning of government, referring to a new process of governing; or a changed condition of ordered rule; or the new method by which society is governed' (Rhodes 1996, pp 652-653 emphasis in the original). So governance is an analytically distinct term from government as understood in the traditional British Westminster model.

However, it is a term on which there is little agreement on meaning. The usual conclusion is that governance is used in various ways (e.g. Pierre 2000, Pierre and Peters 2000, Kjaer 2004). Yet, to be useful as a concept, governance as a term must have some meaning that differentiates it from government. If looked at this way, some measure of agreement on key points can be detected. Governance is often associated with a situation in which the Westminster Government is no longer able to rule effectively alone. Powers have devolved upwards to the European Union, and downwards to other state institutions such as the Scottish Parliament and Welsh Assembly, and to private and semi-autonomous bodies responsible for delivering public services. This process is

usually referred to as the 'hollowing out' of the state (Rhodes 1997, Richards and Smith 2002).

A consequence of this that enjoys support in the literature is that the boundary between the public and private sectors has become blurred with semi-autonomous government agencies or private bodies becoming more responsible for the delivery of government functions, rather than government functionaries themselves delivering services to a doubtless grateful populace. The role of government in these changed circumstances has become, to use a commonly employed metaphor, one of steering rather than rowing the ship of state (Osborne and Gaebler 1993). While this metaphor tells us a lot about the role of the state, and suggests that the state may retain a significant role in governance, it leaves open the question of how the government is to steer, what actual relationships and structures it ought to use to make sure that policy proceeds in the direction of its choice. Indeed, if state capacity is so reduced, and government needs civil society to play a role in policy delivery, it is surely not too fanciful to ask if, in reality, the state can determine the direction of travel without taking into account the preferences of those it expects to do some of the rowing.

The state thus enables or facilitates but does not necessarily perform itself the actions of government. Thus, governance requires a change in the processes of governing, 'it is not what the state does…but how it does it' (Richards and Smith 2002, p.279). Ultimately, the lack of agreement on definition is not so important. The value of the governance perspective lies in its value as 'an

organizing framework' (Stoker 1998, p.18, Pierre and Stoker 2000, p.33), a lens through which to observe changes in the processes of policy. Reflecting this, Jordan et al see 'the instruments that policy makers …select to achieve their policy goals' (Jordan et al 2005, p.478) as 'a relatively simple analytical device that allows empiricists to distinguish 'new' modes of governance from 'old' forms of government' (Jordan et al 2005, p.478).

Policy networks

When examining the literature on policy networks it quickly becomes apparent that there is a difference in their perceived explanatory potential between the UK literature, and the reported literature from the US and mainland Europe. Marsh (1998) conducted a review of the British, American and European literature. He argued that the use of policy network theory in the US was a response, a critical response, to the dominant American model of pluralist explanations of relations between government and interest groups. In the same book, Peters argues that 'American politics remains more unstructured than that found in most European countries … [but] the fact that the network metaphor does not work particularly well in the United States does not negate its utility elsewhere' (Peters 1998, p.32). So in the US at least, policy network theory has not been persuasive either as a description of the policy making environment or as an explanation of policy making.

By contrast, the European literature goes to the other end of the spectrum, seeing policy networks as a new form of governance in response to the

perceived failings of both markets and hierarchies. In his review Marsh identifies two European schools; one associated with the Max Planck Institute in Germany, the other a group of Dutch scholars (Marsh 1998, p.7). Rhodes (2000) also refers to the Max Planck Institute's work and notes that, for these scholars, policy networks as a form of governance '… avoid[s] not only the negative externalities of markets but also the 'losers' – that is, those who bear the costs of political decisions – produced by hierarchies…' (Rhodes 2000, p.63). What makes policy networks viable as a form of governance is the growth in the participation of private sector organisations in the policy process, and the consequent decline in the role of the state. For Marsh, these ideas 'have much in common with the British literature on the 'hollowing out' of the state' (Marsh 1998, p. 8). To the hollowing out of the state idea, the idea of the 'hybrid state' (Richards and Smith 2004) could now be added. Richards and Smith focus on New Labour's efforts to both co-ordinate policy making ('joined up' government) with finding efficient ways to improve policy delivery. Such ways have increasingly included recruitment of private sector organisations to provide public services but without direct financial charge to the end user of the service. Examples would include Private Finance Initiative schemes to build schools and hospitals, private investment in education through City Academies and the use by the National Health service of 'spare capacity' in privately run hospitals to reduce waiting times for NHS patients.

The British literature focuses upon policy networks as an explanation of policy making and implementation. Thus a key question is how useful is the concept in explaining policy making and implementation? What is their explanatory

power? Within the British literature, there is controversy over the utility of policy networks. One argument advanced frequently by Dowding (1995, 2001) is that the concept of policy networks is nothing more than a heuristic device, a metaphor. Dowding insists that explanations of policy making can be found by analysing the motives and actions of political actors directly. Dowding is thus approaching the explanation of policy making from the perspective of rational choice theory, a perspective characterised by both Marsh and Smith (2001, p.528) and Toke and Marsh (2003, p.229) as 'positivist'. Dowding does not deny the need for models of policy analysis, but argues that a model must have both stated assumptions and predictions (Dowding 2001, p.92) which can be empirically evaluated. However, he does appear to favour models which are capable of statistical assessment. Models such as policy networks which rely upon qualitative explanation are, for Dowding, models with 'low leverage' (Dowding 2001, p.95). These observations seem to support the claim that Dowding is more or less a positivist in his epistemology. By contrast, Marsh and Smith deny the charge of positivism though they do claim that their models have explanatory power. They claim that they are epistemological realists (Marsh and Smith 2001). Alternatively, in contrast to Dowding's positivism which ontologically has been described as 'clearly foundationalist' (Marsh and Smith 2001, p.529), some policy network theorists claim that what is required is an anti-foundationalist approach. This stand is adopted by Rhodes (2000) who argues that explanations of policy networks have to begin from the standpoint of the actors involved in the network. However, this approach tends to downplay the possibility of using networks as a predictive tool.

These debates essentially are about the relative influence and importance of structure versus agency in determining policy outcome. From the early period of writing on policy networks, scholars have tended to emphasise the role of one or the other. For those who emphasise agency, the importance of interpersonal relationships is the key to understanding policy networks. This is the position taken by Richardson and Jordan (1979), early scholars in the policy network field, who stress the importance of negotiation between the various groups involved within the policy making architecture. By contrast, Rhodes (1981 cited by Marsh 1998), 'emphasizes the structural relationship between political institutions as the crucial element in a policy network' (Marsh 1998, p. 7).

The structural element was also highlighted by Marsh and Rhodes (1992). In this key text they argued that policy networks could be characterised by reference to a number of factors such as number of participants, type of interest, continuity of the network, resources and power (Marsh and Rhodes 1992, p.251). This typology was a development of Rhodes' 1981 typology in which networks were placed on a continuum with policy communities at one end, with a restricted membership and highly stable structures, to issue networks at the other end, characterised by a large number of members and an unstable structure (Marsh and Rhodes 1992, p.14).

Marsh and Smith's model is an attempt to transcend such divisions, and to recognise the importance of both agency and structure, network and context and network and policy outcome. Although their 2000 paper title includes the

words ‘towards a Dialectical Approach’, it is in fact an approach that had been some time in coming. Hay (1995 cited in Marsh 1998, p.194) and Hay (1998), Daugbjerg and Marsh (1998) and Marsh (1998) had made strides towards such an approach. Hay (1998) stresses the dynamic nature of policy making and thus of networks. A longitudinal study is necessary for Hay. Although he emphasises the formation and termination of a network, the subject matter of this dissertation does meet the requirement of study over time, and arguably of the termination of the MAFF policy network. Marsh (1998) in his concluding chapter identifies the three key dialectical relationships (structure/agency, network/context and network/outcome) (Marsh 1998 pp.194 – 197) which recur in his 2000 paper with Smith.

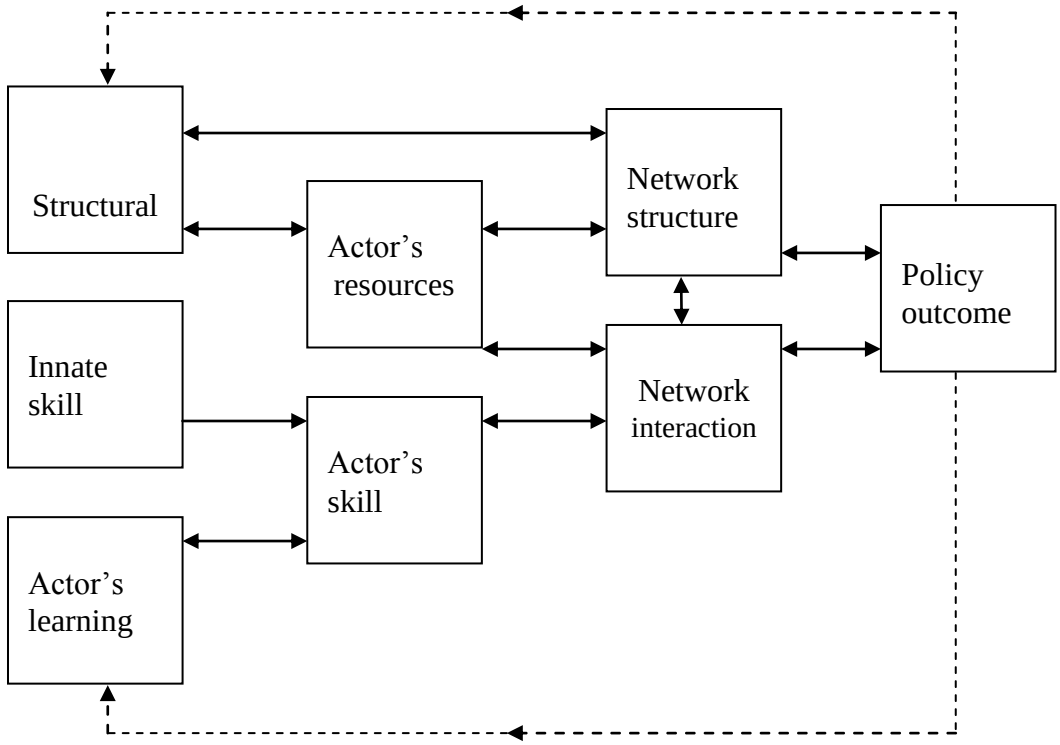
Another question which emerges from the above debates is the appropriate level of analysis for policy networks. The micro level of analysis focuses on actors’ behaviour, and on interpersonal relationships between actors. The macro level examines broad state institutional structures, and indeed theories of the state itself. Policy networks have thus been often characterised as a ‘meso-level’ concept (Rhodes 1997, Marsh 1998). The advantage in doing this is that ‘Macro-level theories are often abstract and frequently applied to concrete situations with little attention to mediating processes, while micro-level theories tend to ignore the impact of broader structural factors on micro-level decision making settings’ (Evans 2001, p.542). Dowding, predictably, argues that the use of ‘meso-level’ has little meaning (Dowding 2001, p.96). However, if it is considered that the term has some meaning, then if the meso-level can be incorporated with the macro and micro-levels then an explanatory

tool of potentially great power has been created. By recognising the importance of both structure and agency and the effect of each on the other, and by recognising the importance of both network and context (which we may conceptualise as external structure), and their effects on each other, and by accepting that policy outcomes effect networks as well as networks affecting policy outcome, the dialectical model may be a good way of integrating the meso-level concept of the policy network with both the micro and macro levels.

'Our model will stand or fall according to whether it has any utility for researchers using the policy network concept to analyse policy making' (Marsh and Smith 2000, p.11). The present work can be seen as offering a test of its utility, thus research questions in this work reflect this intention. Toke and Marsh (2003) assessed the model in a study of the GM crops issue. This is an interesting and related case to the present study, covering, as it does, another aspect of agricultural policy making. However, there is a key difference between that study and this; in addressing an issue with an environmental dimension, a large number of outsider environmental groups were drawn into the GM controversy. Environmental policy making is more often characterised as an issue network, with many actors and groups (e.g. Bomberg and Peterson 1999 on environment policy in the EU). There are differences between the two case studies in this thesis. Although welfare and environmental groups are not completely absent from debates around the AHWS, in the bTB case groups such as the Badger Trust are much more prominent. Neither, though, is seen to approach an issue network as network structure.

So, a key aspect of the methodology employed in this thesis is the choice of Marsh and Smith's dialectical model of policy networks as a theoretical framework for analysis. The model is based upon three relationships described by Marsh and Smith as 'dialectical' or iterative. The model is described diagrammatically in Marsh and Smith (2000, p.10), and also in Toke and Marsh (2003, p.231). Figure 1, below, is adapted from Marsh and Smith.

Figure 1: Marsh and Smith's Dialectical Model



The diagram shows clearly the three relationships identified by Marsh and Smith. These are between: the structure of the network and the actors operating within it; the network and the broader context within which it exists and operates; and the network and policy outcome. Put simply, Marsh and Smith argue that in the first of these relationships, neither structures nor individual

agency hold supremacy, but that actors' actions are calculated and constrained within the structure of the network, that the structure limits the possible choices open to an actor. In the review of the literature on policy networks it was stated that policy networks can be viewed as a meso-level of analysis, and that if it can be integrated with macro and micro levels of analysis the power of the policy network concept is increased. In seeing the relationship between structure and agency as dialectical, Marsh and Smith's model is an attempt to integrate the meso-level with the micro-level. They see 'first, networks are structures which constrain and facilitate agents; and second, the culture of a network acts as a constraint and/or opportunity on/for its members' (Marsh and Smith 2000, p.5). It is not surprising that rational choice theorists such as Dowding oppose policy network analysis since a consequence of the Marsh and Smith approach is that 'In this view, decision makers are satisfiers rather than the classical rational choice theory maximizers' (Daugbjerg and Marsh 1998, p.68).

The relationship between the policy network and the context within which it exists and operates is a response to policy network models which emphasise network and policy change being caused either by factors endogenous to the network or by factors exogenous to it. Marsh and Smith (2000, p.7) argue that 'the distinction between exogenous and endogenous factors is difficult to sustain.' While networks reflect the broader inequalities found within society (Marsh and Smith 2000, p.7, Toke and Marsh 2003, p.233), they can be affected by exogenous factors. Both Marsh and Smith and Toke and Marsh accept Marsh and Rhodes (1992) four categories of change: economic,

ideological, political and knowledge based (Marsh and Smith 2000, p.7, Toke and Marsh 2003, p.233). Changes in any of these exogenous factors can influence the network leading either to policy change or the breakdown of the network itself. However, 'All such exogenous change is mediated through the understanding of agents and interpreted in the context of the structures, rules/norms and interpersonal relationships within the network' (Toke and Marsh 2003, p.233). Thus this dialectical relationship offers an opportunity for policy network theory to explain policy change, traditionally seen as a weakness of the approach. In this study, the network ostensibly breaks down, MAFF being replaced by Defra and the FSA.

The final relationship between policy network and policy outcomes challenges the existing literature's concentration on how networks affect policy outcomes. For Marsh and Smith (2000), outcomes also affect networks in three ways. First, a policy outcome may affect the membership or balance of resources within a network. Second, policy outcomes may damage the position of a particular interest in the network. Marsh and Smith give as an example the weakened position of the trades unions in economic policy networks after the Conservative government's change in policy (Marsh and Smith 2000, p.9). Third, policy outcomes affect actors: if a particular outcome fails to benefit an actor's interest, then he/she is likely to pursue an alternate course of action in the future.

Bevir and Rhodes' interpretive approach

The final framework used is the interpretive approach of Mark Bevir and Rod Rhodes. 'Interpretive approaches begin from the insight that to understand actions, practices and institutions, we need to grasp the relevant meanings, the beliefs and preferences of the people involved' (Bevir and Rhodes 2003, p.1). The aim in this section is not to give a complete account of Bevir and Rhodes' interpretive agenda but to recognise the contribution that an interpretive approach can offer to a study in governance that uses a network model of analysis. Their critique of 'the modernist empiricism, and even positivism, that informs much political science' (Bevir and Rhodes 2003, p.3), and counter claims that this represents nothing but a 'straw man' caricature (Smith 2008) are also not the purpose of this section, although they do raise important questions about how we should do political science. Rather, the purpose of this section is to borrow a few tools from Bevir and Rhodes' toolkit.

The interpretive approach sits comfortably with a governance perspective as would be anticipated with Rhodes as one of the advocates of the approach. They seek to decentre governance positing a 'shift to a differentiated polity with a power-dependent core executive hollowed out by internal differentiation and international interdependence' (Bevir and Rhodes 2003, p.198). Chapter three of this thesis examines drivers away from the Westminster model and toward a more differentiated polity including the challenge posed by New Public Management which Bevir and Rhodes identify as one of seven models of governance (Bevir and Rhodes 2003, p.46).

What then can be taken from Bevir and Rhodes? This research reflects an interest in attempting to grasp what governance means to the actors involved in the study and does this in three ways. First, by seeing the policy documents that form the basis of the case studies as an official narrative of what Defra wants to happen; second, by accepting that political actors believe in the approach to policy making that they are engaged in and, third, by an emphasis in chapter five on the meetings of the EIG as they seek to construct a viable way of working from that narrative – Bevir and Rhodes might say that they construct governance in these meetings.

However, this research should not be seen as accepting the entire interpretive agenda for political science, nor is it likely that Bevir and Rhodes themselves would recognise much of their approach in these pages. But within a governance perspective there is a role to play for discourses and narratives in animal health policy and space is given to actors to tell their story as they themselves want to tell it.

The choice of methods and analytical frameworks is, undoubtedly, eclectic. It is reasonable, therefore, to wonder about the validity of these combined approaches and to ask how they can combine to deliver the aims of the thesis. A multiplicity of methods was required because the thesis, necessarily, adopts a multi-disciplinary approach. The principal question of this research asks whether Defra manages animal health policy in a different way to that adopted by its predecessor, MAFF. To understand this requires an examination of change over time. The dialectical model of policy networks offers a political

science tool to explain the observed changes in the network and the effects of previous policy episodes which impacted upon Defra's choice of approach in taking forward animal health policy. The policy network analysis served to impose some order into the project and prevented it from becoming a mere description of what Defra was doing.

The thesis also asks how the new governance measures employed by Defra have worked in practice in respect of two animal health policies: the AHWS and bovine tuberculosis. To answer these questions fully a closer, more intimate, study of Defra was required. Policy network analysis could not, on its own, provide satisfactory answers to these important questions in the study. The political scientist's toolbox was not completely without use here. Interviews and the study of documentation are common enough methods to adopt. But these data required some way of being understood. An interpretive approach which allowed the actors involved to express their position as they wished was required. Within political science, the interpretive approach is now frequently associated with the work of Bevir and Rhodes and, in particular, their two books Interpreting British Government and Governance Stories (Bevir and Rhodes 2003, 2006).

Their remained a need for a third approach, one not derived from political science, but rather from anthropology and sociology. Participant observation was used in order to obtain a clear picture of what was happening in regional laboratories to contribute to the delivery of the Veterinary Surveillance Strategy. Direct observation allowed for a more complete understanding of

how Defra was both claiming to be different and how it was implementing its new governance approach at a local level.

The different methods and analytical frameworks contributed to a better understanding of different aspects of animal health policy; each was chosen to better illuminate the area of the project in which they were employed. When combined they lead to a more complete and richer understanding of the research questions than would have been the case had a purer methodological or disciplinary approach been adopted.

THE PROCESS OF FIELDWORK

Interviews

The section on research design discussed the process of identifying the groups to be interviewed. This section discusses the process of obtaining consent to be interviewed and the conduct of the interviews themselves.

As discussed above, the groups chosen for interview were Defra policy makers in London, the EIG, the VLA and veterinary surgeons in private practice. Selection of individuals to interview was, in some cases, very straightforward. Within Defra's main Animal Health office in Page Street, London, each area of interest has a named individual as section head. These details were easily obtained from Defra's web site which contained a structural map of lines of responsibilities. From the EIG only the chair was interviewed as representative

of the group and to discover how the group was put together and how, in her view, it functioned. Vets in private practice were not selected at random. Types of veterinary practice vary widely and from the perspective of this project only those practices with a significant large animal base were of interest. As another part of the research involved a two week long visit to VLA North, the decision was taken to select practices for interview that were frequent users of the VLA service. This process was eased considerably by past experience working at VLA North giving a ready recollection of the main practices in the area, and the hope that these practices might be more willing to be interviewed by someone whom they knew, however vaguely.

Obtaining consent

In the case of the Defra officials, contact was made initially by letter, on university headed paper, giving a very brief description of the research and how an interview with that particular person would be beneficial to add greater detail to information that was already available in the public domain on the Defra web site. Each letter concluded with an undertaking to make further contact by telephone in about a week's time. Only one policy maker declined to be interviewed, but he redirected me to one of his deputies who proved to be a good interviewee as she had charge over farm health plans and exotic diseases. Interviews with these policy makers were set up on the telephone with their secretaries for various dates over the summer of 2006.

In the case of Helen Browning, chairman of the EIG, contact was initially at the first Animal Health and Welfare Strategy conference held at Leicester racecourse in March 2006. We had both arrived rather early and the opportunity arose for a brief conversation. A formal letter was sent to her at the contact address for the EIG in Defra to which no reply was forthcoming. A second letter was therefore sent to her farm address on her business card and followed up, again by telephone, a little later. As she had already verbally agreed to be interviewed, consent in this case was a formality and a date arranged in summer 2006.

It proved a little more difficult to obtain consent from private practice vets. As with Defra officials, initial contact was by letter addressed to the senior partner in each practice with a request to interview either them or one of their practice colleagues. Again, brief details of the research were included in the letter and the dates on which I would be in the county at VLA North together with an undertaking to telephone a week later. On being telephoned, one vet, fortunately not from a large practice, refused outright. Some agreed when telephoned. One vet was very difficult to track down by telephone. On telephoning the practice I was told that he was out visiting a farm. On calling again at a time I was advised he would be in, he was again out. It took a number of attempts before finally catching him in. On doing so, he was reluctant, initially, to agree to be interviewed. His was the largest practice in the county and the main private client of VLA North. His was also a practice that was regarded as forward looking and progressive and if he were not to participate in the research, this would be a significant setback. Alarmed, and

somewhat desperate, I sought to improve my credibility with him by mentioning that I had worked at VLA North and that I would be conducting some research there soon. On being reminded of who I was, his manner changed completely. No longer was he defensive and reluctant, but remembering who I was became friendly and agreed immediately to my request to interview him.

The nature of the interviews

Interviews with four private veterinary practitioners were the first ones to be carried out in March 2006 at times arranged to coincide with the observational research at VLA North. The short time scale available for the interviews necessarily generated a steep learning curve for time management and conduct of the interviews. In all cases the interviews were semi-structured.

The design of the interview schedule was based upon the desire to cover key themes. While agreeing with Murphy and Dingwall that typologies of interviews are of limited value, these interviews were designed to be of the 'guided' type (Murphy and Dingwall 2002, p.77). The interviews all began with a simple question about the informant's practice – its geographical coverage, size and balance between large and small animal practice. This was not intended to be a data generating question but, rather, a question designed to get the informant talking and comfortable with the presence of the recording equipment on the table. Subsequent questions covered the main topics of interest – the experience of MAFF during the 2001 FMD outbreak, the main

policies that have emerged in animal health since Defra was created and questions about ideas such as vets' understanding of terms such as 'stakeholder.' Each section of the interview began with a standard question, although the precise wording of it varied from interview to interview, and follow up questions depended upon the content of the informant's answer.

The first interview, though planned to last an hour, was completed in just forty minutes. Another interview was just over half an hour. In contrast, some other interviews with this group exceeded the hour comfortably. These were the interviews with vets known personally, rather than ones not known so well. Perhaps some backup structured questions would have helped to further prompt the less talkative informant and also to prompt the, at this stage, very inexperienced interviewer.

This lesson was learnt and, in later interviews with policy makers, a slightly different approach was adopted initially of having more prepared questions ready in case initial answers to topic introducing questions failed to produce a satisfactory line to follow up. That was the case for the first interview with a policy maker, the DCVO. Perhaps reflecting growing skill in interviewing, or perhaps reflecting the informants' greater skills at being interviewed or their desire to put across their story, several subsequent policy maker interviews were conducted in line with Richards' prescription that 'the key requirement is flexibility' (Richards 1996, p.202). However, of course these interviews were more focussed on the individual informant's particular responsibilities rather than ranging over the whole raft of policy areas. So, for example, informant

‘Defra official 2’ was asked about bTB but not about the Veterinary Surveillance Strategy. Those policy makers whose brief was more wide ranging, such as the Minister, the CVO and the Deputy CVO were asked questions across the animal health sphere.

Participant Observation

Participant observation at VLA labs was chosen as a research method for two reasons. Firstly, to offer a contrast between how the VLA went about its task in its MAFF days and how it operated under the new management of Defra. Considerable (thirteen years) experience of working for the VLA was brought to this part of the project. Secondly, participant observation offered the chance to observe at first hand how animal health policy was being delivered at a local level away from London.

Decisions had to be taken about both where to conduct fieldwork and for how long. Initially, both decisions were straightforward but one came to be modified in the light of initial fieldwork experience. The answer to the question where to conduct fieldwork was driven by a combination of practical considerations and a desire to be able to undertake a comparative study for this part of the project in order that conclusions might not be based on just one observation.

VLA North is located in the North-west of England. It serves a largely rural geographical area. The laboratory serves an area with a very large number of

sheep farms together with dairy herds. Although there are some pig and poultry units, there are not many and these two sectors are not the significant elements of the area's farming mix. This location was chosen primarily because it was where the vast majority of the experience brought to this project was obtained. This offered the advantage of already knowing many of the people being studied, allowing the possibility of 'playing up my credentials' as recommended by Bryman (2001, p.297) together with a geographical presence far from London and nearness to the practice vets that were to be studied. The original plan was to visit VLA North for two periods each of two weeks. One two week visit was intended to coincide with what, from experience, was a time of considerable workload. February/March was selected. This is because VLA North is located in an area with a high number of sheep farms. Ovine abortion is a common event, with cases beginning in late December and continuing through to lambing time in April. The peak period for ovine abortion is February and March. Traditionally, many vets liked to submit samples to the VLA for diagnosis and confirmation of the cause. The two main causes of ovine abortion are EAE – Enzootic Abortion in Ewes – caused by the bacterium Chalamydia psittici and toxoplasmosis. Diagnosis of EAE is straightforward clinically, the placenta becomes thickened and plaques can be observed in the inter-cotyledon areas. Laboratory confirmation of the condition is by stained smear of these areas revealing the bacteria characteristically stained. Toxoplasma is suspected on noticing spotty cotyledons and confirmed by a test on fluid obtained from the foetus, or by fluorescent antibody test (FAT) on a smear made from a clinically typical cotyledon on the placenta.

With up to 20 – 30 cases a day being referred to the VLA lab there is significant pressure on a small staff to carry out the required work. In addition, both conditions are transmissible to humans and consequently pregnant women are excluded from contact with such material in the lab. With the gender balance of staff in the labs heavily biased toward women, a staff pregnancy can therefore also contribute to putting remaining staff under increased work pressures. Hoping to see the lab under strain would help with observations about how far quality procedures were implemented and would help to show what was not getting done in the lab. This would include seeing if surveillance farm visits were being cancelled at this time of year.

VLA Midlands was chosen as a contrast to VLA North for again predominantly practical reasons. VLA Midlands was close to Nottingham University and thus easy to get to on a day to day basis saving both time and financial resources. In addition, the mix of farms served by VLA Midlands was different to that of VLA North. Poultry farming is much more common in the area served by VLA Midlands and there is far less in the way of sheep farming. One further difference was that VLA North was a relatively new, purpose built complex whereas VLA Midlands is a rather ad hoc arrangement utilising pre-existing buildings that had a previous use.

Obtaining access was a rather long process involving various bureaucratic hurdles. VLA local laboratories have a parallel management structure. Vets and clerical support staff are managed by the Senior Veterinary Investigation Officer, while laboratory staff are managed by the Senior Scientific Officer.

Permission was initially sought by letter to both managers at VLA North. The laboratory manager was then detailed to handle the application. There was no reluctance on the part of local managers to allow the fieldwork to take place, but formal permission was required from levels of manager above the local lab level. Telephone discussion with local management suggested that this would be given on the basis of his recommendation. Once formal permission was obtained there was a bundle of forms to complete including a health declaration, a criminal record check and an Official Secrets Act declaration. This latter one seemed a little odd since, as a former civil servant, I had already signed the Act many years previously. This process took some time and it was fortunate that planning for it had been undertaken well in advance. The first week's fieldwork at VLA North finally began on Monday 27 February 2006.

Having obtained permission to visit VLA North using personal connections there, permission to visit VLA Midlands was easier to obtain. A letter was sent to management there mentioning that I had visited VLA North and suggesting that the manager there contact VLA North to check my bone fides.

Ongoing Access

Burgess (1984, p.49) refers to the question of access being a process not an event and that different people are likely to be gatekeepers to different areas of a research site. This proved to be the case in this project too, particularly at VLA Midlands where I was unknown by anyone at the lab prior to my visit. Some extracts from field notes written up in the evening give some examples

of where this was the case. The names used are not the real names of the people concerned.

At VLA North, ongoing access was far less of a problem as I had worked with the majority of the staff there during my time as a civil servant. Most people were therefore happy to talk to me and to answer my questions. However, the person in charge of the bacteriology department, the place where most of the 'action' occurs at VLA North was unknown to me. The strategy I used to try to obtain his trust was to present myself as a possible resource to him, desperately hoping that a nearly six year absence from the lab hadn't completely blunted my skills as a laboratory worker. My research diary entry for that day records events thus:

> 'Today I spent the morning in the bacteriology department. I hoped to be able to gain the trust of Gordon [Head of Bacteriology] and Harriet [another lab scientist], neither of whom knows me. To help with this I asked Gordon if there was anything that I could do to help. He asked me how was my parasitology. I asked if he meant the fleece stuff or the faecal stuff. This seemed to satisfy him that I knew enough. He then asked me to examine three sheep fleece samples for mites. I took this, in part, as some rite of passage for access. Note for those not me reading this: close up and personal, sheep wool don't smell too good, though there are far worse things to sniff. Plus, looking for these mites can be a needle/haystack type proposition unless the sample has been well taken. Fortunately for me, these were well taken. I found a mite in the first sample quite quickly, put it on a slide and identified it as Psoroptes ovis (sheep scab) rather than Chorioptes (mange). That I could do this so quickly gave me great pleasure, and I guess that some things, if done often enough just get hard wired into the brain, never to be forgotten even after a long passage of time. The second sample was also positive for scab (again found quickly by me). It was as if I had never been away, plus Gordon and Harriet seemed content to take my word for it that they were Psoroptes. This I took as a good sign. Feeling confident was my big mistake. The third sample, like the others was a large sample. The general rule is that you have to look at as much sample as is submitted until a mite is found. An

> hour later I still hadn't found a damn mite in this sample. I couldn't believe that it could be negative, the scabs were quite convincing for Psoroptes. However, as Ruth very kindly said, this sheep could have been in a different field. The upshot of my not finding the mite was that Ruth would later have to boil up some of the scab in potassium hydroxide (KOH) to try to release mites encrusted in scab. This is not fun. [boiling fleece in KoH]'

This particular rite of passage successfully completed, Gordon was content to treat me more or less as 'one of us' for the rest of my visit and I was able to lend a hand in the labs while talking to staff and making the observations that I wanted to make. I took the view that folk would be much more willing to speak and be less self conscious if they were talking to someone who was pitching in rather than just passively watching. Gobo (2008) writes that the researcher on site is obliged to assume a role (Gobo 2008, p.122). The role that I assumed was that of a familiar figure. In assuming that role I was able to participate and assist and gain the confidence of staff in the hope of improving the quality of my observations. This strategy was successful as I was able to achieve what Ryen calls a 'cultural awareness' allowing me to become 'the competent participant' (Ryen 2008, p.99).

Day to day access problems were more severe at VLA Midlands where I did not have the advantage of prior acquaintance with any of the staff. Having negotiated access to the site the first problem was actually getting in to the labs. At VLA North I was issued with a security access card to get into the building. The fact that I was given one of these cards perhaps reflected my previous work there, the fact that I was known. At VLA Midlands I had to ring the bell each day to get in. Access here, to people and laboratories, was negotiated much more on a day to day basis. In one lab it was possible to try

the same approach as at VLA North of using what lab expertise I could offer as a way of gaining access. This was more unpleasant than at VLA North. At VLA Midlands, the task was cutting open day old chicks and removing various samples for salmonella testing. The samples were not the freshest.

The arrangement of the labs at VLA Midlands presented a further problem. At VLA North, general cultures and examination of agar plates to identify bacteria took place in the one lab. At VLA Midlands, this task was split up into two separate labs. Access to the bacteriology lab was very difficult and ultimately achieved through a shared interest. My notes describe my reception by the officer in charge of bacteriology when first seeking access as 'not frosty exactly, but nor was it friendly' (Research Diary 12 September 2006). Access was finally gained when the discovery was made that Teresa was a runner. A 'casual' broaching of the subject at the afternoon tea break secured an invitation to her lab for the next day.

Comparing the two labs

The decision to visit two VLA labs was proved to be merited when considering the differences between them. Esterberg (2002, p.63) discusses the boundaries of the site to be visited and the different locations within the site that make observations possible. There were clear differences between the two sites. Both labs were in a rural setting, but the similarities between them were few. VLA North is a modern, purpose built facility with modern benches and labs arranged to the convenience of the VLA North way of working. At this lab it

was possible to determine the way of working and place labs in situations that assisted these preferences.

However, even here, changes in work patterns that had followed the 2001 FMD outbreak had required alterations to the fabric of the building. These changes were prompted both by changing government policy post 2001 and by VLA management directives towards further rationalisation. One change to the building that followed after my visit was a major one. At the end of a meeting of the EIG, I spoke to a vet present at the meeting whom I had known from his practice at Cumbria. I mentioned that I had been there the previous year and had noted how much money had been spent on the site. Not possessing the skill of short hand I could not record his answer verbatim. However, his reply was on the lines of 'Money wasted more like' which was followed by a complaint about rationalisation of laboratory testing and a mention of the fact that environmental legislation had caused the, at the time, purpose built incinerator to have to be decommissioned as it would prove too expensive to bring it up to present day regulatory standards.

By contrast, VLA Midlands is a much more ad hoc arrangement of buildings. The main labs are located in one building, but the rooms are, by and large, rather small and cramped. Lighting was another problem that I noticed when there. Most of the time it was OK for normal activity, but from time to time it was a bit dingy. Indeed, the whole place had a slightly down at heel feel to it. Arrangement of rooms was also not conducive to developing a team spirit. Unlike at VLA North, the administration offices were split into two areas. The

reception area was a small room while the majority of the administrative staff worked in a larger room well away from the labs. Unlike at VLA North, it was quite possible to go through the day without seeing any administrative grade staff other than the person sat at reception. The labs, being smaller than those at VLA North, required a more specialist approach to activity. So, unlike at VLA North where culture and determinative bacteriology (the process of identifying bacteria) took place beside one another, with appropriate distance to prevent contamination, this was not possible at VLA Midlands. Routine cultures took place in 'Main lab' while determinative bacteriology took place elsewhere. This required some significant movements of culture plates between labs. Furthermore, it meant that, unlike at VLA North, it was less easy for staff under-employed in one activity to see quickly if they might be better employed on another. The consequence of this was that some staff could be very busy while others were fairly quiet.

The differences between the two labs also extended to working practices that were not constrained by physical environment. A striking example of this is the different approaches to determinative bacteriology. At VLA North, the plates are 'read' the morning after culture. The process of reading a plate is fairly straightforward. Most samples are cultured onto a general purpose growth medium called a blood agar plate. Most bacteria will grow on this medium. Particular samples, where specific fastidious bacteria are a possible isolate are also cultured using more specialist media, but, in general, it is the blood agar plate that is most common. To read a plate, remove the lid and take a cautious sniff. Hold it up to a light source (at VLA North the lab was

orientated south facing deliberately to aid this) and describe what is seen. Some bacteria have a characteristic appearance and can be presumptively identified on that basis alone. Others appear as white or grey colonies of varying sizes. All of this is described and written down, together with an estimate of the quantity of growth (e.g. trace, scant, moderate or profuse growth). Early identification is aided by samples also being cultured onto McConkey agar, a selective medium on which some bacteria will and other will not grow. Those that do grow demonstrate by their colour on this medium their ability to either ferment or not ferment the sugar lactose.

This process was similar in both labs visited. However, at VLA North, the vet who was the 'duty vet' for the previous day whose cases these were would come and look at what was grown and tell lab staff, after consultation with them, which isolates were of interest. This co-operative process where the vet brought her clinical expertise and knowledge gained performing the post mortem examination and the lab worker brought his specialist skill at identifying bacteria appeared to be appreciated by both parties. Routine cases, such as cultures of milk from mastitic cows where there is a limited number of significant isolates, were usually given less consideration by the vet who tended to confine her remarks to requiring a test of antibiotic sensitivity on the significant isolate or asking for further work where no cause for the mastitis could be determined from the initial culture. One consequence of this co-operative practice was that a lot of time was saved in not pursuing the identification of isolates of dubious significance. This was not the case at VLA Midlands, where the vets stayed out of the labs and waited to be told what had

been isolated. The process here, consequently, was much longer and more time was spent identifying isolates than at VLA North. So, at VLA North, this process of identification would normally be over by lunchtime whereas at VLA Midlands it would usually continue into the afternoon session.

There were, of course, similarities in practice too. Both labs undertook post mortem and bacteriology work from samples submitted by private vets. Both labs undertook cultures for tuberculosis. This was a reflection of the increasing importance of bTB as an economic disease (see chapter six for detailed discussion of this case study). At VLA North, this work was done in a lab converted from a virology lab, virology being a discipline that had been rationalised and no longer offered at VLA North. At VLA Midlands, a lab previously used for serology was being transformed during my visit into one for doing the gamma interferon test for bTB, while cultures for TB took place in a small separate building on the site. This building was the only one that was modern and kitted out to modern standards of fittings. The fact that it was separate gave it an isolated feel. This, in part, reflected the fact that although a modern building, it had previously been used by the VLA's Quality Control Unit. This had now moved into different premises allowing VLA Midlands to use the building.

The original research design, discussed above, proposed two visits each of two weeks' duration both of the two VLA laboratories. However, after the first experience at VLA North, this decision was reconsidered. The reasoning behind the two visit strategy was to observe the labs at a time when it was

anticipated that they would be busy and again at a time normally considered to be quiet. This would allow observations to be made about the extent to which volume pressure of work served to restrict time available for surveillance visits and other activities that might be considered part of the VLA's animal health remit. However, the first visit to VLA North, the visit at a time that was supposed to be busy, was not in fact busy. Conversations with staff confirmed that this was now normal following the programme of rationalisation and a shift from regarding the private vet as the customer of primary importance to regarding Defra as the most important client. The significance of this shift is discussed in chapter seven. Here, it should be noted that as the interviews with private vets and VLA staff had been completed in the first two week period and a good quantity of data gathered, there was no longer any need to pay a second visit.

In the case of VLA Midlands, it may be argued that problems in gaining trust with staff there justified a second visit. However, here too, work throughput was fairly slow and the hectic activity characteristic of VLA labs prior to 2000 was absent. Indeed, the only periods of frenetic activity observed, and a very minor one, occurred in respect of dealing with chick carcasses for salmonella work. The rush here was a time requirement to start the cultures by a particular time to comply with the Standard Operating Procedure for the test, rather than a rush induced by a heavy load of work. At VLA Midlands too, there was plenty of time for casual discussion and, again, the necessary data was obtained in the one visit. Consequently, in the light of these experiences, the

decision was taken to restrict this package of work to one visit each to the two VLA labs.

The researcher on site

This package of work, the two visits to VLA laboratories, must inevitably raise the question of the impact of the researcher on the research setting. Esterberg (2002, p. 64), for example, discusses the attributes of the researcher in relation to the research site and project. Burgess (1984, p.89) discusses how his experience as a former teacher influenced the direction and conduct of his research in a secondary school. These considerations need to be discussed in this project as I was formerly with the VLA.

The advantage of familiarity has already been alluded to in respect of gaining access both to VLA North in the first instance and also to private vets in the northern region. Another advantage of this familiarity was that at VLA North the process of ongoing access was fairly straightforward. This was not the case at VLA Midlands. Here, I was not known in the same way as at VLA North. My research diary noted the difficulties stemming from my own personality and also from the perception of me by VLA Midlands staff some of whom seemed to think that I was there at the behest of Defra management. Buscatto (2008) also experienced that sense of '…being an outside employee, sent by top management to evaluate organizational practices' (Buscatto 2008, p.39):

> 'Yesterday was a little uncomfortable, not through any lack of welcome on the part of folk at the lab but because of the oddness of

> it combined with my crashing inability to make small talk with folk about whom I know almost nothing. There was also the feeling that I was regarded with some suspicion by some people. Again today I had to explain, more than once, that I was not here at the behest of Defra, that I was not checking up on them or spying on them. It would have been better if Yvette [a senior manager at VLA Midlands] had read out my letter asking to come at her last team briefing or at least told them why I was here.'

VLA Midlands thus presented a more challenging task of gaining acceptance. One undoubted advantage was knowing the language. In any research involving ethnographic or observational methods, one problem can be learning the language of the subject group (Burgess 1984, pp.93–94). In this research, language was not a problem given my experience in the VLA and that I shared the same scientific language as those whom I was observing. While the specific language of the lab could have been learnt, knowing it already meant that the research 'hit the ground running' and allowed what was a fairly brief period of time in the field. As Bradney and Cownie (2000, p.88) note in their study of Quaker business practice, 'to learn a language is one thing, to be a native speaker is another.' These language and technical skills, as already noted, were also very useful for the process of ongoing access.

There was a possible problem, however, with possessing such knowledge from the start, a problem of balancing this insider status with the need to acquire a critical distance to conduct the research in a proper manner. The objective was '[T]o maintain the balance between 'insider' and 'outsider' status; to identify with the people under study and get close to them, but maintaining a professional distance which permits adequate observation and data collection' (Brewer 2000, p. 59–60). In part, especially at VLA North, this objective was

aided by the fact that this was not a long term ethnographic study of the sort that an anthropologist might undertake, but rather a targeted observation of the changing role of the VLA in delivering animal health policy. Despite the fact that the work at VLA Midlands was not as enjoyable as that at VLA North, this objective was still achieved in that the differences between the two labs were able to be observed and the functions of the lab were noted. It was more of an observation of process and the fact that it was not possible to enjoy the same level of acceptance by the staff at VLA Midlands compared to VLA North did not prevent this element of the work delivering useful data.

EIG meetings

The third element of empirical work undertaken for this project entailed attending and observing meetings of the England Implementation Group (EIG). The primary function of this work was to provide data for the case study into the Animal Health and Welfare Strategy. However, from time to time, these meetings also yielded information useful for the second case study into bovine tuberculosis.

During the course of the project six meetings of the EIG were attended out of thirteen that took place during the research project. Consequently, not all meetings of the EIG were attended. There were two main reasons for this. The first reason was one of practicality. Some meetings of the group were held in the regions. Confined to public transport, it was not possible to get to the venue in time. Indeed, one meeting in Herefordshire was not accessible at all by

public transport. Two meetings in total were not attended for this reason. The other reason for not attending was that some of the meetings were not going to discuss topics relevant to this project. One meeting in particular was focussed entirely on companion animals and, as such, was outside the scope of this research and so not attended.

At the meetings that were attended, the strategy adopted was to observe, take notes, and try to minimise my impact upon the meeting and the people at the meeting. This was not taken to the point of ill manners; I did speak to stakeholders present and also to members of the EIG during the, welcome, breaks for refreshment. As time went by and I got to recognise some of the more frequent attendees, I would engage them in conversation hoping to obtain some useful information. One such conversation at the end of an EIG meeting yielded a particularly interesting remark about money being wasted in the VLA and a good general discussion of bTB policy that reinforced my view that vets in practice are very enthusiastic for a cull of badgers. However, I deliberately chose not to ask questions or to make a contribution to discussion during those parts of the meetings where the chair specifically opened up debate to people in the audience.

There was one occasion when this non-participation strategy failed. This was at the Animal Health and Welfare Conference held at Leicester racecourse. Plenary sessions were easy, just sit, listen and note. But this conference had workshop sessions and it proved impossible not to participate. I attended the workshop session on consumers, a session which confirmed my view that the

public is constructed in animal health debates almost entirely as consumers. During this session, the EIG Chair turned to me and required me to say what I thought on the point in question.

DATA RECORDING AND ANALYSIS

The previous section discussed the process of obtaining empirical data. This section looks at how the data was recorded and what was done with and to it.

During visits to VLA labs a research diary was kept. This was written up in the evening after each day's work. It was written fairly quickly and the decision was taken not to alter it once written in order to preserve it as a record of immediate impression and description and not to turn it into a cosy post hoc narrative. This data is therefore quite raw. It has been selectively used, with quotes taken from it to illustrate points that I wished to make. Where quotes have been used, the names of individuals referred to have been altered to preserve anonymity.

Notes taken at EIG meetings similarly have been used as a record of my observations at the meeting. Chapter five which looks at the AHWS has tended to use quotes from the official minutes which are extensive. These minutes, together with my notes, were analysed together to identify and address study themes, e.g. 'stakeholder' or 'partnership'. All minutes and notes where a particular theme was discussed were looked at and compared to give a flavour of how the EIG has understood these themes.

Interviews were partially transcribed from the digital audio recording, the degree of transcription dependent upon the relevance of the data. No attempt at conversation analysis was undertaken and so pauses for thought, unless long or obviously significant, were not regarded as relevant for analysis. The 'erms' and other manifestations of verbal punctuation were not transcribed. Once transcribed, analysis was done on the basis of coding for themes such as groups mentioned as stakeholders, bTB, badger culling etc. Doing this gave a choice of quotes illustrative of thinking about a particular theme by the person or persons concerned. In using quotes some, but not all, names have been used. So Ben Bradshaw and Helen Browning were content to be named. I decided to refer to Defra officials as 'Defra official 1' etc to preserve their anonymity. Practice vets too are not referred to by name for the same reason.

CONCLUSION

The primary focus of this research is on animal health policy and whether it is different in practice under Defra. Underneath that overarching question lie concerns about how science is being used and about changes in governance that reflect a broader shift from a government discourse to a governance one. This chapter has sought to explain the decisions that were taken in respect of how to study the questions and a description of how that research was carried out.

The chapter has described how the research was prompted by a general belief that animal health policy would be different following the 2001 FMD outbreak. Was that actually going to be the case in practice and how would any change manifest itself in terms of science and governance? The process by which the case studies were chosen and which groups of actors were chosen as objects of study was also discussed. Certainly other cases could have been chosen to study. Avian influenza or bluetongue might today be good choices. However, at the time of commencement of the research, bTB was the main endemic disease that was a cause of conflict over science in Britain and remains a good choice. The AHWS, as the over arching animal health strategy, and as a strategy that made in creating the EIG a conscious attempt to be different, is a case with a variety of animal health policy issues.

This chapter has also introduced the analytical framework used in this research. The general literature on governance, policy networks and the interpretive approach was discussed and the specific features of the Marsh and Smith model discussed. The model is used fully in chapter seven in analysing and explaining policy change.

The thesis now moves on from questions of research design to look in detail at the story of BSE and FMD and changes in governance that pre dated the creation of Defra. Then, the new settlement of Defra is discussed and the case studies looked at in considerable detail.

Chapter 3: The old settlement

The policies for animal health emerging now from the Department for Environment, Food and Rural Affairs (Defra) are presented by the department in a different manner and with a different emphasis than previously. Openness and public consultation are now commonplace features of Defra's style. At the time of writing, there are seventeen current consultations on a variety of strategies, plans, and proposed directives and regulations. The aim of this chapter is to identify the features of Britain's policy-making style that preceded this discourse, and to discuss some of the factors which undermined this old style. Much of the literature on policy style is general. However, Dunleavy argues that a literature review should be focussed upon the research subject of the wider thesis (Dunleavy 2003, p.61). Therefore, although many of the sources used in this chapter refer to policy-making in general, an attempt is made to relate the arguments of various authors to the experience of the agriculture department, and in particular to its animal health responsibilities.

This chapter is divided into three sections. In the first section the features of the old policy-making style are identified. The second section examines political factors which put this model of policy-making under pressure. Political pressures include the policy of the Conservative governments of the 1980s and 1990s to expose the public sector to market forces wherever possible, and of the utilisation of management practices from the private sector in the public sector. These processes together constitute 'New Public Management' (NPM). Within MAFF, this policy can be seen to have had the

effect of reducing the department's capacity for animal disease surveillance and for action to handle animal health problems on its own. In addition to NPM, Britain's membership of the European Union (EU), (previously the European Economic Community (EEC)) can be seen to put some institutional pressure to change policy-making style from a consensual model toward a model based more upon a rule-oriented approach common on the European continent and similar to the policy style in the United States.

The third section discusses a number of policy problems which contributed to pressure being applied to the old policy style. Common to these policy problems is that they politicised animal health policy, bringing it into the public arena. In addition, it has been suggested that these problems contributed to a decline in public support for policies emerging from this old policy-making style. The phrase 'policy problems' is chosen deliberately. Some authors prefer the term 'policy disasters', for example, van Zwanenberg and Millstone (2003) on the BSE saga. Dunleavy argues that 'Identifying policy disasters is notoriously difficult. It can only be done with hindsight and even then it is rare for consensus to be achieved' (Dunleavy 1995, p.52). Furthermore, '[I]n Britain the sad truth seems to be that policy mistakes on a very grand scale are now accepted as inevitable, almost routine, a natural corollary of our system of governing' (Dunleavy 1995, p.54). However, in the BSE case, the charge that it was a policy disaster has come under specific attack by Forbes (2004). Furthermore, Fisher (1998) writing from a historical perspective has also challenged the idea that BSE constituted a policy disaster. Given that the objective here is to identify factors which placed a policy

making style under pressure and not to offer judgement on whether particular policy outcomes constitute a disaster, the milder term, 'policy problem' is preferred for this purpose.

The particular policies examined all pertain to issues with an animal health involvement and which exercised the animal health policy network. These policy problems are the salmonella in eggs debate of the late 1980s, BSE which became a problem in the public sphere in the mid 1990s but whose origins lay in decisions taken earlier on, and the 2001 foot and mouth disease (FMD) outbreak. In the salmonella case the closeness of the relationship between the National Farmers' Union (NFU) and MAFF is seen to be an important factor in producing the policy outcome. However, the salmonella in eggs story also serves as an early example of how animal health issues can impact upon human health. The possibility for departmental conflict between the MAFF, responsible for animal health, and the Department of Health (DoH), responsible for human health is shown. In the other two policies, BSE and FMD, the interesting aspect from the perspective of examining changing policy style, is the government's use of science, and its claims to base policy on the best scientific advice. In both BSE and FMD, this government claim has been challenged. In the BSE case the tone of the critique is that the science that was relied upon by government was that which posed no threat to the objective of supporting the British beef industry. In the FMD case, the accusation has been made that an, arguably, equally valid policy, on the basis of the science, of vaccination was rejected for political reasons. The effect of both cases is to

contribute to a lessening of public confidence in government pronouncements on scientific matters.

BRITAIN'S OLD POLICY MAKING STYLE

For Jordan and Richardson the British policy style has five overlapping features – sectorisation, clientalism, consultation, institutionalisation of compromise and the development of exchange relationships (Jordan and Richardson 1982, p.81). 'Britain is best characterised as emphasising consensus and a desire to avoid the imposition of solutions on society' (Jordan and Richardson 1982, p.81). The implications of this are clearly that policy changes are incremental and gradual – radical changes are generally non-starters, and that the British policy style is essentially a reactive rather than an anticipatory style. However, party manifesto commitments may sometimes override carefully constructed policy compromises and short circuit the 'normal' policy style (Jordan and Richardson 1982, p.100). Each feature of the system as identified by Jordan and Richardson is discussed.

Sectorisation

Sectorisation is the establishment of specialisms within government, of discrete policy areas. This has the advantage of limiting the necessary range of expertise that particular departments and policy communities need to have by rendering certain consequences of policy choices as irrelevant to its particular

concern. A consequence of this sectorisation for Jordan and Richardson is that ministers become spokesmen and women for their departments and are expected to fight for their department's interests. Wilson (1977 quoted in Jordan and Richardson 1982) reports a view expressed to him by a civil servant within MAFF as 'The duty of MAFF is to present the arguments for help for farming. Other Ministers will soon bring forth criticism based on trade policy or implications for public expenditure' (Jordan and Richardson 1982, p.82).

Clientalism

With sectorisation resulting in departments being in competition with one another, Jordan and Richardson see the development of clientalistic relationships between departments and particular interest groups. The former Head of the Home Civil Service, Robert Armstrong dates this development to the Second World War. 'I suppose the best known example of this is the Ministry of Agriculture, Fisheries and Food, whose sponsorship of the farming and fisheries is so powerful, close and persuasive that they have frequently appeared to other departments, such as the Treasury, as the official spokesman for these industries in the counsels of Whitehall' (Armstrong 1976 quoted in Jordan and Richardson 1982, p. 85). For Jordan and Richardson, this means that far from being under pressure from interest groups, a department '[W]ill itself attempt to mobilise activity by groups' (Jordan and Richardson 1982, p.85).

Consultation and Negotiation

The third feature of the British policy style identified by Jordan and Richardson is that of consultation and negotiation. For them, 'Consultation appears to have become the bureaucratic norm more so than in other countries' (Jordan and Richardson 1982, p.85). They give a cultural bias seeing decisions as being legitimated by consultation and a functional necessity as the reasons why the British policy style was so characterised by consultation. It is this aspect of the policy style that renders the British system resistant to radical policy changes. They note the attempts by the Heath government to move towards a more anticipatory, information-based, perhaps today we would say evidence-based, method of decision-making and observe that it ran contrary to '[T]he strong tradition of bargaining and consent' (Jordan and Richardson 1982, p. 86). Parallels could perhaps be made here with the present government's attempts to utilise an evidence-based policy-making style leading to the Prime Minister claiming to bear the scars on his back as a result of his attempts to get public service reforms implemented as he discovered that some of the prescriptions ran counter to this culture of negotiation and consultation.

This aspect of consultation contributes to the notion of 'insider' and 'outsider' groups within a policy network. Insider groups are automatically on any list of consultees for a particular department. 'Even where a consultation exercise is very broad, it is often the case that the departments have a very clear view of 'who counts'' (Jordan and Richardson 1982, p.87). Thus within the

agricultural sphere, the National Farmers' Union (NFU) is an example of one such insider group. Some groups can enjoy partial insider status. For example, although previously an 'outsider' group, the Soil Association is now very much an insider group in the sub-sectoral network around organic food where it fulfils an important job for government by certifying most produce sold in this country as organic. However, in other areas of agricultural policy it retains its position as an outsider group whose policy positions are largely ignored (Toke and Marsh 2003).

Another consequence of a consultative policy style is that 'The need to consult and negotiate with a specific set of groups concerned with each policy problem, of course, has a direct bearing on the nature of policy outcomes' (Jordan and Richardson 1982, p. 92). The insider groups likely to be consulted are insider groups precisely because they are prepared to accept the prevailing consensus policy position. Thus policy change is likely to be gradual and incremental rather than radical or anticipatory. An anticipatory policy is likely to come up against the carefully negotiated position within the policy community negotiated over a period of time perhaps running into years.

The institutionalisation and regularisation of compromise

Jordan and Richardson see the committee as the outstanding feature of the British policy process. The use of committees is a way of creating the formal structures for institutionalising group contact with departments. In addition, it is also the favoured way of recruiting scientific expertise to be mobilised for

government policy. Such committees can be standing or ad hoc. Again, for Jordan and Richardson the effect of these committees is to minimise risk and conflict within the policy community (Jordan and Richardson 1982, p.93). This element of policy style has continued within animal health policy, with the England Implementation Group continuing this tradition.

The development of exchange relationships

For Jordan and Richardson, this means that the members of a policy community share a common language and a common interest in the avoidance of sudden policy changes. Differences between parties within the policy community are acknowledged but each actor is expected to take account of the important, vital requirements of others in working out their own position. Policy making becomes a largely professionalised process and debates are couched in similar language and arguments treated with seriousness only when expressed in the language of the community (Jordan and Richardson 1982, p. 94). Once more, exchange relationships work to increase co-operation between actors and to minimise sudden policy changes. In policies with a scientific element, the professional scientists within the advisory framework can become de facto policy makers. As Jasanoff argues, 'In Europe, scientists are often the effective policy-makers, since a recommendation by a scientific panel tends to decide the ultimate policy outcome' (Jasanoff 1986, p.23).

Discussion

In summary then, the Jordan and Richardson view of the 'old' British policy making style is that policy making is sectored, with a department having responsibility for a discrete policy area, clientalistic, and based on a tradition and assumption that influential groups will be negotiated with over policy and that consultation is the norm. While they do not state so explicitly, the Jordan and Richardson view suggests that government departments can be 'captured' by a dominant interest within their policy sector. In the case of the MAFF policy community, the dominant actor is the NFU.

The co-operative nature of the British policy style relying upon consultation and negotiation has been described by other writers. Writing about environmental regulation, Vogel notes that 'British regulation is relatively informal and flexible' (Vogel 1986, p.24). In addition, '[T]he rules they [regulators] issue tend to be based on a consensus among engineers and scientists in both sectors [business and government]' (Vogel 1986, p. 24). One consequence of this consensual style is that once agreed, the 'line' should be held by all parties to the agreement. Jasanoff agrees, '[T]he tradition of consensual decision making dictates that a united front should be presented behind documents that are formally 'agreed'' (Jasanoff 1986, p.59).

However, American writers such as Vogel and Jasanoff also emphasise that civil servants and expert advisors are protected from public scrutiny. '[I]n Britain regulatory officials remain relatively insulated from both parliamentary

and judicial scrutiny' (Vogel 1986, p.21). Both Vogel and Jasanoff compare the American practice with the British. Both find that the American system is more conflictual and open to challenge in the courts than Britain's consensual style of policy making. This is especially the case in scientific debates surrounding questions of risk. Writing in the mid 1980s both Vogel and Jasanoff saw advantages in Britain's closed, consensual policy making style. For Jasanoff (1986), the closed policy environment allowed scientists to effectively 'close the book' on scientific controversy. The controversy was resolved by means of negotiation and agreement rather than the establishment of some standard which could later be open to judicial challenge as was the American experience. Furthermore, the closed nature of the British system gave the public fewer reasons to challenge expert opinions. Writing at the time of the BSE crisis, Jasanoff (1997) contrasts the different bases of public trust in regulatory and expert decisions in the United States and Britain. In the United States, '[T]rust is reposed in formal processes, such as rule-making and litigation, and in styles of reasoning that ensure the transparency and objectivity, if not the wisdom, of governmental decisions. In this policy environment, no expert or official can be counted on to exercise discretion honestly unless subjected to continual supervision and challenge' (Jasanoff 1997, p.228). By contrast, in Britain,

> '[T]rust is created through embodiment in trustworthy people… Many have knighthoods … [and] The most eminent are elevated to the (unelected) House of Lords, where they are in a position to influence some of the nation's most significant legal and policy decisions… In the British regulatory process, then, public confidence in governmental advisers is secured through testing the reliability of persons rather than (primarily) the rationality of their views' (Jasanoff 1997, p.227 - 228).

These features of the British policy making style can be argued to be manifestations of what has been variously called 'traditional public administration', 'public sector ethos' or 'public service ethos'. Dunsire (1999) paraphrases Stewart and Walsh's (1992) six principles of traditional public administration.

> '1. public provision of a function is more equitable, reliable and democratic than provision by a commercial or voluntary body;
> 2. where a ministry or other public authority is responsible for a function, it normally carries out that function itself with its own staff;
> 3. where a public body provides a service, it is provided uniformly to everyone within its jurisdiction;
> 4. operations are controlled from the headquarters of the public body through a hierarchy of unbroken supervision;
> 5. employment practices … are standardised throughout each of the public services…;
> 6. accountability of public servants to the public is via elected representative bodies' (Dunsire 1999, p.361).

For this discussion, the key points are numbers two and six. Services are provided by the department's own staff and accountability is along the bureaucratic hierarchy and finally to elected representatives. While this is clearly an idealised characterisation, particularly points three, four and five, it is not an unreasonable description of the public service ethos after the Second World War. The major change that occurred since then has been the increasing professionalization of government. More experts became drafted in to government departments, or rather, government departments employed directly more experts, including scientists and engineers. This is not to say that government never previously employed scientists before. MAFF's Central Veterinary Laboratory, for example, dates from 1914, but it is to say that the supremacy of the generalist within the civil service came into question and that

the increasing numbers of professionals brought with it changes in working practice and culture (Dunleavy and O'Leary 1987).

The consequence for the public service ethos of greater professionalisation is that 'in areas where expertise is important, issues are pulled out of the general political arena into the more private politics of 'policy communities'' (Hill 1997, p.120). For Dunleavy and O'Leary (1987, p.302), 'Professional communities act as a key forum for developing and testing knowledge, setting standards, and policing the behaviour of individual policy makers and policy-implementers.' This increasing professionalisation of government combined with the tradition of consultation and negotiation, contributes to expert groups being insulated from public accountability. It enables the expert, or group of experts, to become de facto policy makers free from professional conflict and scrutiny via the exclusion of outsider opinion. In addition, they are free from direct public scrutiny as a result of the doctrine that public servants are shielded from public scrutiny and are accountable only to representative bodies.

Britain's 'old' policy style is based on institutional arrangements in which departments are responsible for particular policy areas. In the case of animal health, this was the responsibility of MAFF. MAFF employed its own staff, both administrative and scientific. Departments enjoyed close relationships with key players in their policy sphere and some have argued that departments could become captured by particular interest groups. MAFF, in particular, has been subjected to this charge. Policy making was consensual, with negotiation

between government and affected parties. Increasing professionalisation worked within that culture of consultation, and was shielded by notions of a public sector ethos from close scrutiny. The public was expected to trust the system because of the trustworthiness of those who headed it. In comparison with the United States policy making style, it was far less conflict laden. Yet, for all the conflict over regulation that characterises the American style, for Vogel, 'on balance American workers, consumers, and investors are no better protected than their counterparts in Great Britain' (Vogel 1986, p.24). In short, the system was believed to work effectively. It is now time to consider the factors which placed this consensual system under pressure.

SYSTEM UNDER CHALLENGE

In this section, two types of pressure upon Britain's policy making style are considered. Firstly, political pressures are examined. Most importantly here is the desire of the Conservative governments of the 1980s and '90s to introduce market type reforms into the way the public service operated. These measures are collectively known as New Public Management (NPM). However, also important is Britain's relationship with its European partners, and the pressure for changes to Britain's policy style emanating from the EEC is examined briefly.

Secondly, animal health problems which caused difficulties for the MAFF-centred policy network are examined. These problems are: the salmonella in eggs controversy of 1988, BSE and Foot and Mouth Disease. Each of these

diseases revealed shortcomings in the UK's management of animal health policy.

Political pressures

'NPM, like most administrative labels, is a loose term' (Hood 1991, p.3). It is also rather difficult to obtain a consensus within the literature on its precise components. Dunsire (1999) sees NPM as an attempt to stand on their heads the six principles of traditional public administration discussed above. Hood (1991 and 1995) discusses NPM under seven headings, while Jordan (1994) makes little mention of NPM directly, but does discuss extensively two features of NPM; the expanded role for the private sector and the Next Steps Agencies. What does seem clear is that 'NPM is emphatically not a uniquely British development' (Hood 1991, p.3). It might be thought that this could be explained by noting that ideas associated with the 'New Right' enjoyed international success at the time, but Hood (1994) offers convincing argument against this idea (Hood 1994 p. 101 –102). However, in the case of Britain, the ideological preferences of the Thatcher governments of the 1980s clearly played a role in creating a political environment in which NPM ideas could flourish. Boden et al (2004) quote Ridley (1996) as finding that ideology played a role in NPM in Britain.

In Britain, NPM can be seen to have a number of important characteristics. Firstly, there was the move to create departmental agencies. In MAFF's responsibility for animal health, the Central Veterinary Laboratory (CVL) was first given agency status in 1990 and subsequently merged with the network of

regional diagnostic laboratories to produce the Veterinary Laboratories Agency (VLA) in 1995. At its creation, there was some concern within the regional laboratories that they would lose their traditional autonomy and would become swamped by CVL management practices. The Veterinary Medicines Directorate (VMD) was another early agency within MAFF's remit, also coming into being in 1990. Very closely related to the creation of agencies is the idea that certain services would be subjected to market testing. Thus privatisation, or the threat of privatisation hung over many civil servants. Thirdly, a more contractual basis of service provision was introduced. In MAFF, the Agricultural Development and Advisory Service (ADAS) was separated from the SVS in August 1990 and became an agency in 1991. ADAS carried out both research and advisory / consultative functions. The majority of ADAS was privatised in 1997, being sold to a management and employee buyout. Fourthly, management practices common in the private sector were imported into the public sector. This resulted in the removal of national pay rates with agencies negotiating with their staff separately from 'core' MAFF. Interestingly, the personnel who remained in core MAFF were mostly administrative staff. Scientific and technical functions were mostly transferred to the new agencies and given a measure of autonomy from MAFF central control. These features clearly overlap to some extent. Thus agencies were created in such a way that they had the potential at least to be transferred as viable businesses into the private sector. The most important aspects of NPM for animal health were the creation of agencies and the introduction of management ideas from the private sector, including a reliance on service level agreements and a focus on value for money.

Kjaer (2004) has identified six characteristics of NPM. These are the transfer of private sector management principles to the public sector, privatisation, agencification, competition, decentralisation, and citizens' empowerment. Each is discussed below with the exception of citizens' empowerment which had little role in animal health policy at this time.

The transfer of private sector management principles into the public sector is often referred to as a focus upon the three Es of economy, efficiency and effectiveness. Kjaer cites Rhodes (1997) as the originator of the term whereas Boden et al (2004) omit the reference to Rhodes. Economy can be seen simply as the desire to limit spending. On her election in 1979, Mrs. Thatcher, under the influence of Conservative Party intellectuals such as Keith Joseph, and independent New Right Think Tanks such as the Institute of Directors, was committed to the monetarist explanation of inflation associated with Milton Friedman and the Chicago School of economists. Part of the prescription of this group of thinkers was to reduce public spending. Thus the economy element of NPM appealed to the government. In addition, it fitted in well with her general ideological commitment to challenge the 'Big State'.

Efficiency relates to the relationship between inputs and outputs. The greater the quantity of outputs for each unit of input, the greater the efficiency of the organisation. Within animal health, one way to become more efficient is to reduce the extent of any real or perceived 'slack' in the system. Services can be rationalised, capacity can be reduced. Capacity was reduced in part by closing a number of Veterinary Investigation Centres (VICs), and placing recruitment

bans and limitations on those that remained. Within the Veterinary Laboratories Agency the quest for further efficiency savings continued. Services once offered at all regional laboratories such as blood biochemistry, became rationalised into a small number of laboratories serving a number of others. For blood biochemistry, for example, some labs became little more than posting services to those centres which retained their biochemistry departments. In general, the problem in animal health with seeking to improve efficiency by reducing capacity is that sudden events may cause overload in the system as the capacity has been reduced. For MAFF, the Foot and Mouth epidemic of 2001 can be seen as an example of such overload. NPM can therefore be seen as a rejection of an administrative design which favours the values of security and resilience highly, and the attendant capacity to continue in situations of worst case. Hood (1991, p.10 – 15) characterises these values as 'lambda-type values' and compares them with 'sigma-type values' of leanness and efficiency which are the characteristics of the NPM approach to administrative design.

'Effectiveness has always been a difficult concept for public organisations' (Boden et al, p.50). Public bodies do not, on the whole, operate at a profit, nor are the overwhelming majority expected to. In place of a 'bottom line' measure of effectiveness, NPM initiatives included assessing public organisations according to their performance measured against targets. In addition to organisational level targets, NPM reforms also introduced performance related pay for civil servants. This was based upon the established practice of each civil servant undergoing an annual review. Previously, so long as performance

was considered adequate, a civil servant would progress along their pay scale until they reached the top. Under performance related pay, the speed at which any particular civil servant would get to the top of their scale would become dependant upon their overall performance evaluation. Staff marked as 'excellent' or 'box 1' would move up the scale faster than those whose performance was considered only satisfactory.

Privatisation

Private sector management practices were thus introduced into the public sector. Targets, performance measures, and an emphasis upon economy were intended to introduce the perceived benefits in terms of efficiency of the private sector into the public sector. However, this was not the sole manifestation of NPM. Privatisation was another assault upon the traditional public sector ethos. Perhaps more than any other measure that constituted the NPM agenda, privatisation is the element most obviously and closely associated in Britain with the ideological attack of the New Right on the idea of the 'big state.'

The Thatcher government was an enthusiast for privatisations. British Gas, British Telecom, British Rail and other state owned companies were sold off by means of massive share issues. The government's commitment to a share owning democracy was indicated by making a significant proportion of the shares available to individual investors with a low minimum investment required. The process came to be seen as a safe investment for individuals as

the offer price of the shares was below the market level. Prices rose, sometimes considerably, within hours of the launch enabling many people to obtain a significant cash windfall by selling their small stakes to institutional investors quickly. In addition, local government was required/encouraged to transfer services from directly run in-house providers to private companies running services under contract. This was common for refuse collection, and, by the mid '90s, the transfer of council housing to management by Housing Associations was also starting to take off. This was in addition to the creation of a right of tenants to purchase their council house from the local authority at considerable discount. There was thus a great diversity of ways in which services could be privatised. Ashford (1993, p. 39) quotes Madsen Pirie as identifying forty different ways to effect privatisation. In the wider public sector, privatisation in its many guises served to increase the complexity of the state and to reduce the capacity of ministers to give a strategic steer to policy (Flinders 2005). Within the animal health policy arena, however, privatisation did not play a major role save for the privatisation of a significant section of ADAS. In animal health, the next subject, agencies, were much more important.

Agencification

In the NPM agenda, agencies could be seen as one of two things. Firstly, they could be a first step towards outright privatisation by serving to delineate a particular service from its wider departmental context, or, secondly, agencies could be seen as good in themselves offering greater autonomy from central

departmental control and thus the possibility of greater efficiency. It has been the second of these which has been dominant. '[B]y 1995 there were 109 agencies employing 67 per cent of the civil service' (Kjaer 2004, p.28), and by 1998 138 agencies employing over 75% of civil servants (Boden et al 2004, p.55). Within animal health, two agencies were established in 1990 under the 'Next Steps' programme. These were the Veterinary Medicines Directorate (VMD) and the Central Veterinary Laboratory (CVL). CVL was merged in 1995 with the network of regional laboratories known as Veterinary Investigation Centres (VIC) to form the Veterinary Laboratories Agency (VLA).

Each agency is headed by a Chief Executive, accountable to a minister. Each agency operates under a framework of a document setting out its objectives and its performance targets. 'Agencification means that implementation becomes more distinct from policy-making, because the agency's explicit guidelines are to implement policy already decided by government' (Kjaer 2004, p. 28). Boden et al (2004) argue that agencies emerging from the Next Steps process were met with some resistance by the Treasury. The reason for this being that agencies were supposed to devolve down to Chief Executives some flexibility over pay and conditions. This challenged the Treasury's long established control over pay and expenditure 'the source of its authority in Whitehall' (Thain and Wright 1995 quoted in Boden et al 2004, p.55). However, central agency budgets continued to be set by the Treasury limiting the room available to agency Chief Executives to pay staff more than core departmental staff. In the VLA for example, working hours for regional

laboratory staff were reduced by one hour to 37 hours per week at the creation of the agency to bring these laboratories into line with CVL (Personal experience).

Competition

This element of the NPM programme was addressed in a number of ways. Privatisation is the obvious way, but also the creation of quasi-markets in the public sector, and by competitive tendering for private contractors to provide public services. Within animal health, there was little scope for direct competition. The nature of the work including its public health role, allied to the impossibility of charging economic rates for a number of tests offered little room for competition for services. However, the VLA was expected to compete with the private sector in small measure by bringing products to market, for example. In addition, profitable areas of diagnostic work such as blood biochemistry which could be mechanised to deal with large sample numbers, and bacterial growth media production had encouraged a small number of private providers into the marketplace. Faced with this competition, the VLA sought efficiency gains by concentrating its biochemistry, histology and media production in a smaller number of places to obtain economies of scale savings.

Decentralisation

Kjaer distinguishes carefully between two types of decentralisation. In deconcentratation policy continues to be made at the centre, while implementation is devolved down. In devolution all authority is devolved downward. Kjaer states that NPM was mostly about devolution (Kjaer 2004, p.29). However, in Britain in the animal health field, deconcentratation has been more common. The VLA has been charged with implementing elements of animal health policy. However, its freedom to do this could be questioned. On the one hand, a number of disease surveillance programmes have been set centrally by Defra as the VLA's main customer (VLA 2005, p.6) and local laboratories implement them in accordance with rigid protocols to comply with NAMAS accreditation. On the other hand, the necessary artistry in the diagnostic process, inevitably results in personal autonomy for individual Veterinary Investigation Officers to initiate a wide range of tests which incur a cost to the agency's surveillance budget.

In addition to the pressures from the NPM critique of Britain's traditional policy style, it is worth noting that Britain's consensual approach also came under pressure from Britain's membership of the EEC. Vogel, writing about environmental regulation, notes that the American system of regulation with its emphasis on norms and upon an adversarial relationship between the regulator and the regulated had found support among consumer groups. In addition, this model also seems to be the model followed by the European Community.

> '[T]he rules and regulations emanating from the European Community over the last decade increasingly resemble those adopted by the United States in the early 1970s. Their standards are uniform, relatively strict … They have been the source of considerable tension between Britain and the Community's other members' (Vogel 1986, p.27).

Writing about BSE, Gerodimos (2004, p. 924) also recognises the importance of the EU in British policy decisions.

Summary

Britain's consensual policy style was subjected to considerable pressure in the 1980s and '90s from Conservative governments seeking efficiency improvements that NPM offered, combined with an ideological preference for the private over the public sector. NPM measures had a significant impact in MAFF. The closure of a number of VICs served to reduce the capacity of the state to directly manage animal health. The drive for greater efficiency removed any surplus capacity in the system. Gerodimos, a critic of the changes represented by NPM, argues that 'Consecutive British governments have sought to diminish the centre's responsibility for managing public policy without putting an effective mechanism in place' (Gerodimos 2004, p. 911). However, he advocates transparency and open government and thus cannot be seen as a supporter of the old policy style either. These political changes alone cannot explain why the consensual model came to be replaced by a policy style based on a discourse of openness, transparency and stakeholder participation.

Policy problems, casting doubt on the system's ability to handle challenge, also played a considerable, indeed decisive role. It is to these problems that attention now turns.

POLICY PROBLEMS

Three policy problems in animal health are considered. Each contributed, in part, to undermining the consensual policy style within animal health and contributed to the changed institutional architecture and tone of the policy documents that are the subject of the next chapter. These problems were: salmonella in eggs, BSE and FMD.

Salmonella in eggs

In chapter one it was shown how the agricultural policy community came into being and how it was able to subsume the separate food policy community under the institutional arrangements of MAFF in the immediate post war drive for increased food production. For Smith (1991), the 1988 policy problem of salmonella in eggs represents evidence showing that the post war consensus over food policy had fractured. Smith argues that food became a political issue, and that the policy network around food changed from a policy community to an issue network (Smith 1991, p.235). If Smith is correct in this argument, important consequences follow. The very close association between agricultural and food policy means that actors outside the agricultural policy

community gain freedom by virtue of their position in an issue network to criticise agricultural policy. Neither food nor agricultural policy networks can completely isolate themselves from each other; the connection inevitably is too close. The consequence of this for the position of science in debate is that it must surely become harder for the agricultural policy community to be immune from scientific criticism from outside, when actors within the food issue network have resources to publicise scientific opinion which may differ from the 'official' position on the science emanating from the agricultural policy community.

The political problems from salmonella in eggs emerged in 1988. Yet, the fact of salmonella in Britain's poultry industry was known much earlier than this. MAFF and the Department of Health found that 80% of frozen chickens contained salmonella in 1980, and the Lancet reported that salmonella enteritidis cases had risen from 1,087 in 1981 to 6,858 by 1987 (Smith 1991, p. 240). The view of the agricultural policy community, according to Smith, was that salmonella in chickens was inevitable and that it was the duty of the consumer to minimise the possibility of human infection rather than farmers or the government (Smith 1991, p. 241). Smith does not say why this was the view of the policy community, but it is likely that they knew that the conditions in which both broiler and laying chickens were kept rendered the birds susceptible to a number of diseases including salmonellosis that would spread rapidly through the farm.

Because salmonella was not just an animal health policy problem, MAFF did not enjoy unchallenged supremacy in dealing with it. The public health implications of salmonella in eggs meant that the Department of Health was also an important institutional actor. Smith (1991) reported that John MacGregor, then Minister for Agriculture, was aware of a growing problem with salmonella and eggs by 1987. However, '[B]etween 1987 and 1988 discussion of the problem was limited to the policy community as MAFF and DoH attempted to determine the extent of the problem' (Smith 1991, p. 241). Thus, with clear similarities with the government's approach to communicating the risks of BSE to the public, the agricultural policy community attempted to keep discussion within itself until science had provided hard evidence of a link between salmonella infection and eggs. Furthermore, 'They [the policy community] did not believe it necessary to take precautions whilst evidence was gathered' (Smith 1991, p.242). Once a link was apparent by May 1988, the question of what information to issue to the public inevitably arose. Smith (1991) noted a number of meetings between the two ministries and representatives of the egg industry, the NFU and the British Egg Industry Council (BEIC), through the summer of 1988. It was not until November 1988 that a press release warning the general public of the potential dangers posed by eggs was issued. 'The strategy of the community was to try to retain the information and the control of the issue within their own network… They thus discussed what information should be released with the producers – the NFU and the BEIC – who saw the advice before it was made public' (Smith 1991, p.243).

The agricultural policy community's attempts to retain control of the issue and to keep it out of the political arena were fatally wounded on 3 December 1988 when the junior minister at the DoH, Edwina Currie, in response to an invitation by a journalist to comment on the increasing incidence of salmonella, stated (correctly according to van Zwanenberg and Millstone 2005, p.66) that the majority of egg production in Britain was contaminated with salmonella. This statement was the culmination of conflicts that had been growing between the DoH and MAFF through the summer of 1988 (Smith 1991). Smith argues that the DoH considered that MAFF was too protective of producer interests and had succeeded both in delaying and toning down the public warning in respect of eggs (Smith 1991, p.244). Mrs. Currie's statement brought into the public arena debates which hitherto had been retained within the policy community. Farming interests responded both with a defence of the safety of eggs, and with demands that Mrs. Currie be obliged to resign. Within two weeks the resignation was obtained, both Smith (1991, p.244) and van Zwanenberg and Millstone (2005, p.66) citing threats by the NFU to take legal action against the DoH for loss of revenue as part of the reason for the forced resignation. Currie's claim about the salmonella status of British egg production was not challenged, she did not after all claim that most eggs were infected with salmonella, but her words, though accurate, were taken to imply this and egg sales dropped significantly. Mrs. Currie must surely go down in history as one of a very small number of ministers who have resigned for telling the truth.

Smith argues that to see her resignation as evidence of the power of the farmers' lobby would be a mistake (Smith 1991, p. 244). He sees the fact that the issue became political at all, in the sense of generating public controversy, as a sign of the weakness of the farmers' lobby. MAFF saw salmonella as an industry problem, the DoH as a problem of public health. 'Consequently, the community no longer had a shared world view and the issue became political as a result of this interdepartmental conflict' (Smith 1991, p. 244). Nor were farming interests successful in preventing new regulation. A number of measures, including a Food Safety Act, were introduced soon after Mrs. Currie's resignation to deal with the problem. Several factors could be cited to explain the decline in the power of the farmers such as a greater interest in healthy eating, and Britain's membership of the EU. However, Smith sees the rising power of the retail sector, especially supermarkets as particularly important. He sees retailers '[A]ppealing increasingly to customers ... and have used their position to challenge the policy community on behalf of the consumer' (Smith 1991, p.247). Essentially, what Smith is saying here is that supermarkets have been able to force themselves into the policy community and control sufficient resources so as to be able to challenge the previously dominant position of the NFU representing the interests of producers.

From the perspective of Britain's policy style, the salmonella in eggs story may be as important as BSE. The policy community tried to keep the issue within its own confines, science was deployed to examine the risks but, crucially, there was reluctance to issue guidelines of a precautionary nature while the evidence was being gathered. It marked the end of the consensus

around the idea that production was more important than other considerations in agriculture, and saw the fracturing of the unity between the agriculture and food policy networks. The conservative use of science, and the insistence that food was safe to eat until proven otherwise was also to be seen in the next case, that of BSE.

Bovine spongiform encephalopathy

Bovine Spongiform Encephalopathy (BSE) is one of a class of diseases known as Transmissible Spongiform Encephalopathies (TSEs). TSEs are invariably fatal diseases affecting the brain. Spongiform refers to the characteristic spongy holes that can be observed in stained histopathalogical preparations of infected brain tissue. In general, TSEs are not new diseases. Scrapie in sheep and goats has been known to exist for some two hundred years in the UK. TSEs have also been found in farmed mink, first identified in 1947 in the US (Phillips 2000, Volume 2, para. 2.16), and in deer. In humans, TSEs include Creutzfeldt-Jakob Disease (CJD), Kuru, Fatal Familial Insomnia (FFI), and Gerstmann-Sträussler Syndrome (GSS). Kuru is a disease which affected tribes in Papua New Guinea which practised cannibalism on the dead as a mark of respect. As that practice declined within the tribes, so did the incidence of Kuru. GSS is a very rare disease affecting movement and speech, progressing to dementia. FFI is an inherited disorder. Interestingly, discoveries in these two diseases followed the identification of BSE in cattle. The most common, though still rare, and best understood human TSE is CJD. By 1986, three forms of the disease had been identified (Phillips 2000, Volume 2, para. 2.22); sporadic, that is, randomly occurring, familial, and iatrogenic (as a

consequence of medical intervention, for example, treatment with infected human growth hormone). Of these three forms sporadic was the most common, and iatrogenic the rarest with only 40 cases worldwide by 1986 (Phillips 2000, Volume 2, para. 2.25).

The first case of BSE in the UK was confirmed in March 1987, although Carol Richardson, a veterinary pathologist at the MAFF's Central Veterinary Laboratory (CVL), had identified a Spongiform Encephalopathy in the brain of one of the dead cows in September 1985 (Rowell 2003, p. 21). Earlier, in late 1984, vets had been called to a farm in West Sussex to investigate an unusual set of symptoms in cows. The delay in obtaining a definitive diagnosis from the onset of symptoms in late 1984 to the final confirmation of BSE in March 1987 seems a long time. Yet, can we really be surprised at the delay? Faced with a disease situation, the natural reaction of both doctors and vets is to try to fit it into their existing frames of reference. This fits in nicely with Kuhn's (1970) description of the workings of science during periods of 'normal science.'

Once BSE became recognised, MAFF vets and scientists were able to successfully routinise its diagnosis. These routines became steadily more efficient. Originally, the whole brain of the suspect animal needed to be removed in one of MAFF's Veterinary Investigation Centres (VICs), placed in formalin and transported to CVL for histopathalogical examination. This was a physically difficult and time consuming process. Later it was discovered that diagnosis required only the brain stem of the animal, allowing the use of an

instrument to remove the brain stem, rather than having to saw through adult bovine skull. This was a significant advantage, particularly following Stephen Dorrell's 1996 announcement that BSE could pose a threat to human health, as aerosol creation from sawing through bone was eliminated. Histopathology was also devolved out from CVL to VICs, with state vets employed as Veterinary Investigation Officers (VIOs) from the VICs being trained at the CVL in recognising the typical lesions in stained brain preparations. As the disease became routinised, the identification of the typical lesions at histopathology was a task that became well within the grasp of a trained laboratory technician, although final diagnosis was always left to the VIO. Down on the farm, clinical diagnosis became easier with familiarity. The symptoms which had puzzled vets back in 1984, head tremors, aggression even from usually docile cows, and staggering and loss of co-ordination, became recognised as the typical symptoms of a BSE case. Farmers too became expert at the recognition of the symptoms of BSE in the live animal. Anecdotal evidence suggests that a few farmers benefited once 100% compensation was introduced for infected animals by buying suspect animals from other farmers who wished to retain BSE free status at discount prices and then claiming the market rate in compensation once the disease was confirmed.

The precise cause of BSE was, and remains, a matter for debate. The early favourite, that BSE was scrapie which had passed directly into bovines was rejected by epidemiological evidence (Phillips 2000, Volume 2 para. 3.16). The focus then shifted to the infection of cattle by scrapie via scrapie contaminated Meat and Bone Meal (MBM). A similar TSE in wildlife park

animals added evidence to MBM being the vector of infection in cattle (Phillips 2000, Volume 2, para. 3.19). While it became accepted that MBM was the vector of infection, BSE as scrapie in cattle has been questioned due to differences between the two TSEs in terms of host range, transmission properties and pathogenesis (Phillips 2000, Volume 2, paras. 3.49 to 3.61 for detailed discussion). So far as the possibility of transmission to humans was concerned, this was regarded as remote. Lord Phillips wrote:

> 'The fact that scrapie does not affect humans was relied upon by officials in their risk assessment from 1988 right up until March 1996, despite events in 1989 and 1990 which seriously questioned the scrapie origin theory' (Phillips 2000, Vol. 2, para. 3.72).

The aetiology of BSE and its potential for infection of humans were, and remain somewhat uncertain. Policy makers were therefore operating in a situation in which the scientific knowledge was unknown. Barker and Peters (1993, p. 2) writing about health policy, devised a six-tier schema based upon the level of difficulty in understanding for the non-expert policy maker. These range from areas amenable to non-expert understanding and study, to those requiring some expert training, through to those where either there are competing scientific views on offer or where the question is scientifically unknown. In the Barker and Peters' schema BSE is clearly a type vi policy case in that little was known about the disease. In such cases 'Any policy based on some particular view or guess as to the facts of the matter would be

speculative' (Barker and Peters 1993, p. 3). This was certainly the case when policy makers were faced with the challenge of BSE.

The Government's response when faced with BSE was to set up an advisory committee chaired by Lord Southwood. This was established by the Chief Medical Officer, Donald Acheson, as a joint committee of MAFF and the Department of Health (DH) in April 1988 and was to examine the implications of BSE for both animal and human health. Southwood was a Professor of Zoology at Oxford University; he was not an expert in farming, human health or TSEs. Rowell (2003, pp. 32 – 36) criticises the failure to appoint Alan Dickinson to the committee, or to ask him to give evidence to it. Dickinson, in contrast to Southwood, was an acknowledged expert in scrapie. However, the appointment of Southwood to chair the Advisory Committee does reveal something significant about British use of expert opinion; that trust is vested in the people rather than in a rules-based approach (Jasanoff 1997 quoted earlier, p.32). In the UK, the US's adversarial policy culture is rejected in favour of a culture of consensus, and largely private deliberations. For Jasanoff, the UK approach is essentially that because the 'right' people have been appointed to the committee its conclusions are seen as deserving of public support and 'Formal justification of its recommendations then seems uncalled for' (Jasanoff 1997, p. 228). This relationship between expert bodies and public trust in their recommendations was to break down when Stephen Dorrell announced in March 1996 that BSE was the most likely cause of new variant CJD in humans. Jasanoff calls this loss of trust in government experts 'civic dislocation' (Jasanoff 1997, p. 221).

The policy response by government to BSE was guided by the advice it received from the Southwood Committee and its two successors, the Tyrell Committee and the permanent Spongiform Encephalopathy Advisory Committee (SEAC) established in April 1990 originally under the chairmanship of David Tyrell and still operational today. The government was keen to be seen to act on the basis of available scientific advice. Indeed, 'reliance on scientific evidence has been a feature of the government's management of the crisis' (Winter 1996, p. 553).

What, then, were the actions taken by the government in response to BSE? '[T]he issue was widely discussed within government. … [and] Perhaps more important, policy development was primarily influenced initially by the conviction that it was an animal health problem' (Greer 1999, p. 600). Given this framing of the problem '[T]he threat to the livestock industry, the desire to provide reassurance to the general public about the safety of British beef and an unwillingness to increase public expenditure were also key influences on policy formulation' (Greer 1999, p. 600). Another consequence of framing BSE as an animal health problem, and from the belief that BSE was derived from scrapie, was that BSE was unlikely to have serious implications for human health. This view was reinforced by the Southwood Report published in February 1989 (Department of Health 1989).

Early action taken by government was therefore consistent with the framing of the problem in terms of animal health. In June 1988 BSE became a notifiable disease which required vets and farmers to inform MAFF if they suspected the

disease on their farm. In July 1988 the decision was taken to slaughter affected cattle and a ban on MBM from ruminant sources came into force. The ban on MBM reflected the then view that BSE had infected cattle via MBM. However, the decision to introduce slaughter of affected cattle was, in hindsight, handled badly. Initially, in August 1988, compensation levels were set at only 50% of the animal's value if it proved positive. Full compensation was only given in the event of the tests proving negative. This decision has been criticised as 'The most serious error' (Grant 1997, p. 345). In addition, 'There can be little doubt that the low rate of compensation provided an incentive to less scrupulous farmers to conceal the disease by marketing suspect animals at an early stage before the symptoms of the disease were immediately obvious' (Winter 1996, p. 552). Many such animals would have found their way into the human food chain in this manner, increasing human exposure to infected food. Again, however, MAFF's framing of the problem explains the decision. As Winter points out, 100% compensation is not automatically available for culls for other notifiable diseases such as brucellosis and tuberculosis (Winter 1996, p. 552). Although clearly a mistake, given the framing of the problem as one of animal health alone, the action is understandable. Full compensation became available in February 1990 and the number of confirmed cases continued to rise until 1992, the peak year for diagnoses (Defra 2004e).

Although the prevailing view was that BSE posed no risk to human health, the Southwood Committee recognised that if it proved to be incorrect 'the implications would be extremely serious' (Phillips 2000 Volume 4, p. 36). This

uncertainty led to a number of measures intended to remove infected material from the human food chain. In addition to the slaughter policy described above, specified bovine offals (SBOs) were banned from the food chain from cattle over six months old. SBOs were those offals such as thymus, spleen and spinal cord thought to pose the greatest (theoretical) risk of infectivity. By 1990, the problem had acquired a European dimension. In March of that year the Commission restricted the export of cattle from the UK to those under six months old, and in April, the disease was made notifiable to the European Commission. Fears about the possibility of human infection refused to go away. Humberside Council withdrew British beef from its school menus in April 1990 (Phillips 2000 Volume 1, para. 648). Also in the early 1990s, the BSE agent was found in domestic cats (Phillips 2000 Volume 1, para. 649), and there was an increase in the number of cases of CJD in farmers and young people. While the increase in CJD cases may in part be explained by doctors looking more for the disease, public concern was heightened. The policy response was to tighten up the controls on the use of bovine offals. In June 1994 the ban on the use of thymus and intestines was extended to cover animals under six months of age.

However, in March 1996, Stephen Dorrell announced to the House of Commons that the most likely cause of the new variant CJD was exposure to BSE infected bovine materials before the ban on the use of offals in 1989. Under pressure from the EU, the government introduced the ‘over thirty month cull scheme’ (OTMS) in May 1996. The idea was to remove older cattle thought to pose the greatest risk to human health from the food chain and thus

to restore public confidence in British beef. The EU meanwhile had taken stronger measures, banning all export from Britain of beef products to other member states on 27 March 1996.

Foot and mouth disease

In contrast with BSE, FMD has been long understood. Also in contrast with BSE, FMD poses no threat, real or theoretical, to human health. It is an animal health problem, and an economic problem for the farming industry. The 2001 epidemic was the first major outbreak in the UK since 1967.

FMD is a viral disease of cloven footed animals, cattle, sheep, goats, and pigs. The initial presentation is pyrexia, followed by blistering on the feet and/or mouth. Symptoms are easily spotted in pigs and cattle, but are much more subtle in sheep. Mortality is low, although animals can become lame, suffer a loss of milk yield and loss of condition significantly reducing their market value. Infected but recovered animals can continue to act as reservoirs of infection. The virus is highly infectious by contact with an infected animal, or by aerosol contamination. Being a viral infection, antibiotic therapy is useless. Before the 2001 outbreak, experience of the disease among veterinary surgeons was limited. As the last major outbreak had occurred in 1967, vets younger than their mid-fifties would have been most unlikely to have seen a case in a farm setting.

Again, unlike with BSE, measures for controlling FMD were well established in 2001. That policy was essentially to slaughter all FMD affected animals and their contacts. This has been the favoured approach in the UK since the 1920s. In mainland Europe vaccination was a tool used as a control measure or to throw a ring around an outbreak. This strategy was rejected for the UK following a report into an outbreak in 1951 – 52, where vaccination was seriously argued for. However, leading vets and farming leaders united to reject these calls (Woods 2004b, p.534) and the post-epidemic report concluded that slaughter remained the right option for the UK (Anderson 2002, p. 22).

A subsequent serious epidemic of FMD occurred between October 1967 and June 1968 during which there were 2,228 outbreaks. At the epidemic's peak, MAFF vets were seeing up to eighty new cases each day (Woods 2004b, p.536). The 1967 – 68 epidemic was overwhelmingly centred on the north-west midlands and north Wales. However, unlike the 1951-52 case, public demands for vaccination and outcry against the policy of slaughter did not take place. Within MAFF vaccination was being taken seriously as an option by vets as concern grew that slaughter may not succeed in bringing the disease under control. MAFF, in the person of minister, Fred Peart, was careful to emphasise that this would be only as a last resort and that anyway they continued to believe that slaughter remained the best policy (Woods 2004a, p.117). In the event vaccination was not required and MAFF remained largely opposed to vaccination. In the 2001 outbreak, debates again raged in public about the correctness of the 'no vaccination' policy.

The 2001 outbreak of FMD began in February 2001 with identification and confirmation of FMD in pigs and cattle from an abattoir in Brentwood, Essex (Bickerstaff and Simmons 2004, p. 397). Essex was not the origin point of the disease, however. Investigations revealed the source of the outbreak to be a pig farm in Northumberland, infection having apparently been contracted from some contaminated swill (Woods 2004a, p.138). Exports of animals were banned within twenty-four hours of the confirmation of the disease on 20 February, but a national restriction on animal movements did not take place until the twenty-third (Bickerstaff and Simmons 2004, p. 397). By the time these control measures had been implemented, the disease had already spread to at least 57 farms (Anderson 2002) via livestock movements through markets and dealers with sheep a common vector of the infection. The fact that sheep acted as the vector of infection helps explain why the disease spread so far before appropriate control measures were put in place as symptoms are far less obvious in sheep than in other species.

With the disease confirmed, MAFF's plan swung into action and animals began to be slaughtered to control the disease. However, in this early phase of the disease, all did not run smoothly. Animals on infected premises were supposed to be killed within 24 hours yet this was often not adhered to. Furthermore, there was '[A]n unwillingness to initiate additional culling policies that would have halted the disease earlier in the campaign' (McConnell and Stark 2002, p. 665). One reason for this was the need to have each case confirmed at the Pirbright laboratory, a process which took several days contributing to delay in having animals slaughtered. MAFF had other

problems. Firstly, there was a shortage of vets as NPM inspired reforms had resulted in a 50% reduction in the State Veterinary Service over the previous twenty years and MAFF's database of farms was found to be inaccurate and out of date (Woods 2004a, p.138).

These problems provoked a strong reaction by policy makers, labelled as 'overkill' by McConnell and Stark (2002, p. 665). By mid March MAFF had instructed its vets to slaughter on suspicion. This resulted in a huge rise in the number of cases diagnosed as 'Inexperienced veterinarians, who feared the consequences should they misdiagnose FMD, began to see the disease everywhere' (Woods 2004a, p.139). Also by mid March the Prime Minister assumed control of the crisis in the Cabinet Office Briefing Room (McConnell and Stark 2002, p. 665), effectively removing MAFF as the lead department in handling the FMD epidemic. 'From late March 2001, the Ministry effectively ceased to make policy. Its role was to deliver it' (Taylor 2003, p. 543). Culling was stepped up and a policy of contiguous culling, that is the culling of animals on farms within 3km of an infected premises, introduced. Troops were employed to provide logistical help with the culling strategy.

This policy followed from the government's reliance on a model of the disease developed by a team of epidemiologists at Imperial College. This model made no allowance for local topography (Bickerstaff and Simmons 2004) and was used by government in preference to its own epidemiologists' model developed by John Wilesmith at the CVL which did seek to account for local variances. The policy of contiguous culling, and the vast funeral pyres that it

created led to much public disquiet and debate about the merits of vaccination as an alternative control policy. In addition, the effective closure of the countryside was hitting the tourist industry hard in heavily affected areas such as Cumbria. Both Taylor, and McConnell and Stark assert that by this stage the government had accepted the case for vaccination, but that this policy was rejected because of the objections of the National Farmers' Union (NFU). Woods (2004a) also states that opposition to vaccination remained the policy of MAFF who were unwilling to act without NFU support for vaccination.

The vaccination debate was complex. Those opposed to it, such as MAFF and the NFU, argued that if Britain vaccinated then the resumption of the export trade would be delayed as a consequence of Organisation Mondiale de la Santé Animale (OIE) rules. However, supporters of vaccination argued that MAFF focussed its arguments on mass vaccination, ignoring the fact that EU laws permitted the use of so-called 'ring vaccination', a policy which was also recommended by the Northumberland Committee in 1968 following the 1967 epidemic. Furthermore, it was argued, vaccination would remove the need to cull animals that were perfectly healthy and assist in opening up the countryside once more (Woods 2004a, p.143). Ultimately, the NFU position held the day and vaccination never occurred.

Contributing to this decision was undoubtedly the fact that by the end of April the peak of new cases had been passed and, with a general election looming, the government moved to relax some controls on movement and to open up the countryside once more. In addition, by now vets had acquired better expertise

in diagnosing the disease. One Cumbrian vet remarking that 'X (a MAFF vet) rarely gets it wrong' (Interview Cumbrian vet B). Cases continued throughout the summer, but the General Election went ahead, delayed by a month from its likely date to 7 June. The last new case occurred as late as 30 September.

CONCLUSION

This chapter has identified the main features of the traditional British policy-making style and analysed the reasons why this style came to be undermined. It was shown that both political factors and policy problems, running in parallel, contributed to an undermining of this style. The implementation of NPM reforms contributed to reducing MAFF's capacity to manage a crisis in animal health. This was shown most clearly in the 2001 FMD epidemic. Membership of the EU, with its rules-based regulatory system, posed a challenge to the British way of consensus, compromise and negotiation. The salmonella in eggs episode represents the point at which the interests of the agriculture and food policy networks diverged. BSE, in particular, led to a loss of public trust in government pronouncements about the science in animal health. FMD, and the debates around vaccination and slaughter showed with great clarity that animal health breakdowns affected the livelihoods of more than just farmers, but the wider rural economy too. FMD also revealed MAFF as not equipped to deal any longer with a major challenge and was in need of reform.

The combined effect of these political and policy pressures was thus to reveal the institutional apparatus of policy-making for animal health to be inadequate for the task. The science was not trusted by the public and the strategies for dealing with animal health were not working. Changes in both policy and approach were urgently required. It is to these institutional and policy responses to this crisis that attention now turns.

Chapter 4: The New Settlement

BSE and FMD were the most challenging, high profile and controversial animal health policy problems faced by MAFF in the last years of its existence. However, to conclude that these animal health problems alone were responsible for MAFF's subsequent demise would be to overstate the case. Running alongside concerns over the handling of animal health policy was a broader set of ideas about the changing nature of the countryside. These concerns reflected the declining importance of agriculture within the rural economy. So, while the management of the 2001 FMD outbreak was MAFF's last major act, to understand the creation of Defra it is important to identify the other policy concerns that were driving government toward institutional change, change which may have occurred anyway even without the FMD outbreak of 2001. It should be noted that Defra itself was not, initially, universally welcomed. Some in the farming lobby thought that agriculture was not given a sufficiently high priority, while some in the environmental lobby saw it as not being sufficiently engaged with the demands of environmentalists.

This chapter has three aims. First, it identifies and discusses the main drivers for departmental change, other than the specific policy problems discussed in chapter three. Second, Defra, the successor department, is looked at in terms of its range of responsibilities and approach to its work. Finally, bringing the chapter back to focusing on animal health, the new set of policies for animal health are discussed in detail with the aim of teasing out from them the goals

of policy and ways of delivering those policies. This examination reveals these policies to be strongly in keeping with the new governance agenda, reflecting the wider reform agenda that characterised the New Labour project.

DRIVERS FOR CHANGE

One element of MAFF's handling of the 2001 FMD outbreak that brought its weaknesses as a department into sharp focus was its failure to consider the wider rural economy. As discussed in chapter three, MAFF framed FMD solely as an animal health problem and dealt with it as all previous FMD outbreaks, by culling infected animals until the crisis was over. The over-riding objective was to regain Britain's FMD free status thus allowing it back into lucrative export markets. Using an actor network theory approach, Donaldson et al argue that for MAFF the only actors involved in the FMD crisis were:

> 'the disease hybrid, and the MAFF and State Veterinary Service (SVS) officials. All other actors in play are reduced to the status of intermediaries who either aid MAFF in the eradication, or aid the disease in its spread' (Donaldson, Lowe and Ward 2002, p. 206).

One of the consequences of this approach was to overlook the problems that FMD posed for the rural economy, and especially the tourism industry, by not just the disease but by the measures employed to control the disease. The losses incurred by agriculture from the 2001 FMD epidemic were estimated by the Centre for Rural Economy (CRE) at Newcastle University to be around £150m, while those of tourism were estimated at £400m (Winter 2003, p. 50).

It was not the case that MAFF deliberately chose to harm the tourist industry, or that it was ignorant of the effects of its policy on that industry. Rather, MAFF's approach to FMD showed it to be unable to accommodate those concerns in its decision making processes. MAFF was revealed, once and for all, as the ministry for farming interests.

This was a significant outcome given that the responsibilities of MAFF had been steadily broadened over the previous decades. Winter (2003) identifies two strands of thinking that had broadened MAFF's role.

One strand was as a consequence of reforms to the Common Agricultural Policy. For Carmichael (2008 p.3), Britain's entry to the EEC in 1973 offered no particular problems for MAFF since 'CAP emphasis on production and self sufficiency was, essentially, an extension of the 1947 Agriculture Act and therefore entirely consistent with the 'looking after farmers' rationale.' However, as food mountains and wine lakes entered the public consciousness reforms were inevitable. Nevertheless, there were different ways in which these reforms could go. For some, liberalisation of the agriculture market was the way while, for others, continuing protectionism was the goal. Franz Fischler, European Agriculture Commissioner, sought in 1996 to steer a middle path between these two competing goals.

> 'What Fischler was offering was liberalisation of agriculture alongside support for fragile rural (as opposed to agricultural) economies and environments, with the CAP becoming a rural development policy to sustain the quality and amenity of Europe's rural landscapes and the social and economic vibrancy of rural communities' (Winter 2003, p. 50-51).

In doing this, Fischler was signalling a broadening of the agenda to include a recognition of valid rural interests beyond agriculture.

These reforms were welcomed by the new Labour Government elected in 1997. The government was faced with further problems with farm subsidies. In addition to farming payments made through the CAP, the new Labour Government took office at a time of falling farm incomes. The farming unions pressed the government for additional help for farmers experiencing difficulties. Government paid an additional £85m in one off payments to livestock farmers between 1997 and £50m to cereals farmers in 1998. Given the tight financial constraints that Chancellor Gordon Brown had imposed upon the government, ministers were concerned that these extra demands from farming meant that less was available for the new government's key priority areas of health and education (Ward and Lowe 2007, p. 413). Thus the Labour government was an enthusiastic supporter of CAP reform and welcomed the outcome of the Fischler discussions, proposals which came to be known as Agenda 2000. It was Fischler's 'second pillar' of the CAP, the idea of support for rural development and environmental projects that particularly appealed to the government.

The interface between agriculture and the environment is the other strand of policy identified by Winter. MAFF had acquired new responsibilities during the 1980s, including a responsibility under the Agriculture Act 1986 to promote conservation. Winter's earlier work showed how MAFF was reluctant to accept these new responsibilities. MAFF 'had to be encouraged and cajoled

by the NFU to pick up the gauntlet of a new and expanding policy agenda' (Winter 1996, p.226). MAFF's reluctance to accept new roles was a defensive reaction to protect itself against the threat of loss of existing responsibilities to the Department of the Environment (DoE) (Winter 1996, p.227).

The NFU had concerns of its own. First, it feared that there was a possibility that agriculture may lose its minister with cabinet status. Second, it was determined that if there were to be environmental regulations then these should be overseen by what the NFU saw as 'its' ministry. Third, the NFU was concerned to ensure that farmers should receive compensation in the event of being forced to accept environmental restrictions and regulation. These three concerns led the NFU to press MAFF for a positive response to accepting responsibility for environmental policy areas (Winter 1996, p.227).

For Labour there were other policy concerns which served to increase its interest in wider rural policy. There was the need to defend the party's 1997 manifesto commitment to a vote on the issue of fox hunting against charges that it simply did not understand the countryside. The Countryside Alliance had enjoyed some success, aided by the Conservative opposition, in creating a sense that Labour was somehow anti-countryside. In its landslide victory of 1997, the Labour Party had won a significant number of seats in rural and semi-rural areas. These new MPs also pressured the government to take action on a rural agenda (Ward and Lowe 2007, p.414).

The government's response was to instigate a measure of institutional change. It set up Regional Development Agencies (RDAs) which brought together a number of bodies including part of the Rural Development Commission (RDC). The research function of the RDC was merged with the Countryside Commission to form a new body, the Countryside Agency replacing the Countryside Commission. The Countryside Agency, a powerful quango was, for Ward and Lowe, merely a by product of the creation of the RDAs (Ward and Lowe 2007, p.413). The RDAs themselves had a much wider remit than the rural, covering urban areas too. It is worth noting that the RDAs have been criticised for not being effective in promoting economic development in rural areas (Lowe and Ward 2007, p.311).

The second element of the government's response was a good reflection of its broader 'modernising' agenda. This was to announce the preparation of a wide ranging Rural White Paper. This was announced in November 1998 and the work was carried out by the Performance and Innovation Unit (PIU), a body based in the Cabinet Office reporting to the Prime Minister rather than to a departmental minister. The PIU's work was backed up by wide ranging consultations organised by both MAFF and the new Department of the Environment, Transport and the Regions (DETR) headed by the Deputy Prime Minister, John Prescott. The PIU reported to the Prime Minister in July 1999 and in September that year Tony Blair addressed the Labour Party conference and delivered an uncompromising New Labour message outlining his idea of the battle between what he termed the new radicals and the forces of conservatism. Perhaps unaware that he meant, at least in part, them, Labour

delegates and trades union leaders clapped enthusiastically as their idea of the forces of conservatism, the Countryside Alliance and farming interests, protested outside the conference building.

The White Paper itself finally saw the light of day in November 2000, fully two years after its initial announcement. Writing before the FMD outbreak, Lowe and Ward described the White Paper as 'best seen as a work in progress, with quite a lot of loose ends dangling' (Lowe and Ward 2001, p.386). The foreword to the White Paper itself was fully consistent with the New Labour project, emphasising the need for inclusiveness. 'In the past some voices have been louder than others. Government must listen to everyone' (DETR/MAFF, 2000, p.5). The paper itself constructed 'rural' in much broader terms than simply farming, although there was a separate chapter on agriculture. The White Paper identified a need to look at market towns as 'foci of local economic regeneration … against a backcloth of agricultural decline' (Lowe and Ward 2001, p.387), and in the chapter on farming, diversification and environmental schemes were highlighted (DETR/MAFF, 2000 p.91).

Looked at as a whole, the White Paper presented what was, arguably, a nuanced understanding of the problems faced in rural areas. It examined the issues of employment and business, including the particular difficulties faced by village shops, Post Offices and pubs, of dependency on the car for transport and of the problems faced by the younger generation of rural people in affording homes in their local communities. This identification of a wider rural agenda can be seen as important for a Labour government under pressure from

organised rural pressure groups such as the Countryside Alliance. In their foreword, John Prescott and Nick Brown perhaps had these groups in mind when they wrote, 'Some people want to drive a wedge between town and country … [we believe] that rural and urban areas are interdependent' (DETR / MAFF, 2000, p.5).

So rural policy was in the process of being recast well before vets examined animals and wondered if they really were seeing their first clinical case of FMD. These underlying drivers for change were the gradual overlap of environmental and agricultural policy areas, the process of CAP reform and the creation of the second pillar, and the new Labour government's much broader modernisation agenda and desire to challenge what it saw as the forces of reaction. However, without the key event of FMD we cannot know how these debates would have eventually worked out in institutional terms. If, as Winter (2003, p.55) argues, FMD speeded up the process of change, what FMD made certain was that MAFF would be no more. FMD thus offered the possibility of a radical restructuring of the department with responsibility for farming. What were the features of this new department?

DEFRA – A NEW DEPARTMENT

The new department came into being after the 2001 general election. The sense that it came about as a consequence of MAFF's failures was given by the new department itself. 'Defra was created to improve the delivery of what Ministers and stakeholders expect of us' (Defra 2001 quoted in EFRA 2002, p.5). In

addition to absorbing all of the functions of the now defunct MAFF, Defra also acquired responsibilities for environmental protection and the Wildlife and Countryside Directorate from the former Department of the Environment, Transport and the Regions (DETR), plus some animal welfare responsibilities and responsibility for hunting with hounds from the Home Office (EFRA 2002, p.5). However, Defra's prospectus saw the new department as more than that:

> 'Defra is more than just a merger of functions from the former MAFF, Department of Environment, Transport and the Regions (DETR) and Home Office; it reflects the Government's determination to exploit the synergies that exist between sustainable development, environmental protection, rural affairs, and food, farming and fisheries' (Defra 2001, p.33).

The prospectus also had a vision statement of a green Britain existing in a world in which the threat of climate change was recognised and addressed by all nations. In the UK, the vision was of a diverse range of economically and environmentally viable communities enjoying high quality public services. Biodiversity was protected, and food produced to high animal welfare standards that contributed to a healthy nation. 'Through the practice of sustainable development, economic, environmental and social, we will achieve our vision' (Defra 2001, p.i).

The aim of Defra, according to the prospectus, was 'Sustainable development, which means a better quality of life for everyone, now and for generations to come' (Defra 2001, p.ii). For Defra, sustainable development meant a combination of economic prosperity with an improving environment. In

evidence to the Environment, Food and Rural Affairs Select Committee (EFRA) Defra confirmed that this was, indeed, its principal aim and that it would take sustainable development as a philosophy across government (EFRA 2002, p.6). Underneath this main aim, the new department had set itself seven strategic objectives including promoting biodiversity, tackling social exclusion and promotion of an attractive countryside for all. Fifth among these objectives was to 'promote sustainable, diverse, modern and adaptable farming' (Defra 2001, p.ii), a placement which caused alarm in the farming press (EFRA 2002, p.8) even though there was no suggestion that the numbering of these objectives carried with it any notion of prioritisation. The NFU also expressed concerns about the new department. In its evidence to EFRA, the NFU submitted:

> 'We remain deeply concerned that Defra is failing to give proper weight to the future of farming. Defra is the sponsoring Government department for farming (emphasis added) at a time when farmers are in a long established financial depression' (EFRA 2002, Ev112, para 9).

What was not stated explicitly in either the aim or objectives of Defra was a mention of climate change, although the fact of climate change was recognised later in the prospectus (Defra 2001, p.6). Climate change subsequently became an explicit concern of Defra such that its web site has tackling climate change as part of its mission and as the first of eight strategic objectives. Farming remained at number five (Defra 2007b).

The scope of the new department was thus very wide, including sustainable development, rural development and pollution as well as animal health.

Indeed, it is important to recognise that animal health was a relatively small area of the department's responsibilities. How might this new department carry out its work?

The new department would carry out much of its work in a manner consistent with the new governance approach. This was, in part, because it was not the only department with responsibilities that impacted on its territory of sustainable development and rural affairs. Defra was not an old governance department with powers to do things directly, as MAFF had appeared to be, nor would it be the department for farming interests. Lord Whitty, minister at Defra described the MAFF approach of being responsible for just a single industry as having 'a certain Soviet-life overtone to it… That kind of relationship is not appropriate to the modern age and there have been painful changes needed to the relationship between the department and the farming sector' (EFRA 2002, Ev66, para 205). As an alternative, Defra would work with other government departments. However, on environmental issues, there were concerns that Defra would become 'a policy ghetto for green issues' (RSPB) and that the environment portfolio had been 'marginalised and distanced from the big decisions' (Friends of the Earth) (both quotes from EFRA 2002, p.6).

The focus for Defra, in terms of means of delivery, was very much on the language of new governance and New Labour, with references to modernising and to a new agenda (Defra 2001, p.33). Defra would also work in partnerships, and would work with stakeholders (Defra 2001, p.34 -35). EFRA

recognised that ‘The Department is certainly making strenuous efforts to change’ (EFRA 2002, p.9). However, EFRA was concerned that the process of change was slow. ‘It is apparent… that significant change to the culture of the department is far from complete – indeed it has barely begun’ (EFRA 2002, p.20).

Looking at farming and animal health, the new governance approach was continued. Indeed, there was little choice since, as the NFU pointed out, ‘many of the key resources such as land are privately owned’ (EFRA 2002, Ev112, para. 6) and farmers’ vets are in private practice. In addition, many delivery bodies for animal health such as the VLA were at arms length from Defra as agencies, and had suffered from budgetary constraints for some years prior to the 2001 FMD crisis, significantly reducing their capacity.

Indeed, the 2002 spending review further cranked up the pressure on the department. Choices had to be made. ‘We cannot do all that we or the public and our customers and stakeholders might want’ was the Secretary of State’s downbeat assessment (Defra 2003b, p.3). In animal health policy, Defra’s priorities at this time were about catching up on the work following BSE and FMD, such as improving tracing of animals, identifying offspring of BSE cases and catching up with the bTB testing programme that had been in abeyance during the FMD crisis (Defra 2003b, p.26). In the future, and reflecting a new governance approach, Defra would seek to strike ‘the right balance between the partners in animal health and welfare as to how the costs are met’ (Defra 2003b, p.26). Chapter five looks in more detail at how this

approach, which became part of the Animal Health and Welfare Strategy, played out.

In 2004, Defra launched yet another strategy, the Five Year Strategy, which continued the new governance approach to farming and animal health. The strategy document echoed the AHWS themes of partnership and of 'balancing' the costs and benefits between industry and the taxpayer. Furthermore, the SVS was to become a new agency from 1 April 2005 (Defra 2004f p. 74-75). In fact, this was not finally accomplished until 1 April 2007. This new department, Defra, also issued new policies on animal health; policies which would reflect what Defra saw as its new way of doing business.

NEW ANIMAL HEALTH POLICIES

From within Defra, new policies on animal health emerged. Three of them, the Animal Health and Welfare Strategy and its two daughter strategies for veterinary surveillance and bovine tuberculosis are discussed in detail as case studies in later chapters. In this section the policy documents themselves are examined, themes drawn out and an attempt made to show how they fit in with the new governance agenda. Although there is analysis in this section, an important aim is to examine the policy documents on their own terms, as they were written. In the case study chapters the limits of how far the new governance agenda is taken in practice is considered much more critically. Before looking at these policies, however, a brief mention is required of a

policy which pre-dated them, the Strategy for Sustainable Farming and Food: Facing the Future, which was published in 2002.

The strategy for sustainable farming and food, facing the future

This emerged from the Curry Commission. It included a foreword by the then Prime Minister in which he identifies some of the problems facing farming, adding that 'We cannot go on like this … It is why I created Defra, to bring together food, farming, rural and environmental policy under one roof' (Defra 2002, p.5). Defra is thus portrayed in this document as the Prime Minister's own creation rather than that of the government as a whole. The foreword to the strategy emphasises one significant element of new governance, noting that 'Government can't do it alone' (Defra 2002, p.5).

In this policy document there is a strong reflection of the Curry Commission's findings, in particular that 'The whole of the food chain has to reconnect with its customers, the world economy, the countryside and the environment' (Defra 2002, p.11). In this quote, echoes of the drivers for change, discussed above, may clearly be heard.

If one word could sum up the message of the strategy it would be sustainability. The word is everywhere. And with it are further reminders of those drivers for change with short sections on rural communities and enhancing our environment. Some proposals designed to bring these desirable objectives about included assurance schemes, regional food branding and farm

diversification. Farm Assurance Schemes and labelling are discussed in greater detail in chapter five when looking at the work of the England Implementation Group in these areas. Important as it is, from an animal health policy perspective there is no need to dwell too long within its pages. Animal health and welfare are accorded just one and a half pages in this strategy and so it cannot say too much by way of detail. But what is in these one and a half pages makes clear that the government's approach to animal health policy in the future would be firmly along the lines of new rather than old governance. There are references to working in partnership with industry, identifying 'the respective roles of Government and other parties… [as well as a need to] consider how costs should be shared between government and industry; and seek the right balance between public and private provision of services' (Defra 2002, p.40). With new governance at the heart of Labour's approach, what did the new policies on animal health look like?

Animal health and welfare strategy

Planned originally to be published in 2003, the Animal Health and Welfare Strategy eventually saw the light of day in 2004. The scope of the strategy is huge, covering all keepers of animals, including domestic pets and wildlife. In this strategy the important priorities for government in thinking about animal health can be found.

Then Secretary of State at Defra, Margaret Beckett, wrote in the Foreword to the Strategy, 'This strategy…provides a route map for regaining public and

consumer confidence in the food we produce and the restoration of our international reputation for the highest standards of animal health and welfare' (Defra 2004a, p.5). The implication of this is clearly that, in the government's view, consumer confidence in the food we produce was lost together with Britain's reputation for animal health and welfare in the aftermath of both BSE and FMD.

Mrs. Beckett's foreword contains several expressions consistent with the view that this new strategy would be firmly in line with a new governance perspective. 'We recognised that the new approach had to be built from the bottom up.' 'All interested parties had to have an integral role in shaping the strategy and a sense that they had a real stake in the outcome.' 'We can only take the strategy forward on a partnership basis' (All Defra 2004a, p.5 emphasis added). In addition, however, is another clear consideration for government, cost. 'We need to work together to ensure that these benefits are achieved and that the associated costs are properly balanced' (Defra 2004a, p.5). No longer would government be proffering blank cheques to the farming industry, but industry itself could expect to bear some of the costs of animal health. Indeed, as the strategy itself made clear, 'Taxpayers cannot be expected to foot the bill when the industry's own practices lay it open to disease threats' (Defra 2004a, p.11).

Chapter one of the strategy states clearly the aim of this new approach.

> 'This strategy aims to: Develop a new partnership in which we can make a lasting and continuous improvement in the health and

> welfare of kept animals while protecting society, the economy, and the environment from the effect of animal diseases' (Defra 2004a, p.11).

New governance themes can be seen in this chapter. The old ways are discarded. 'In the past, the roles and responsibilities of Government, industry and animal owners have been based on a set of assumptions which have not consistently enabled us to work together' (Defra 2004a, p.12). New governance, as developed in this strategy would be based upon partnership and an insistence that 'The primary responsibility for the health and welfare of animals rests with their owners' (Defra 2004a, p.12).

After that strong indication that things would not be the same again, the strategy moves on to outline what the new approach would look like. The 'vision' for the strategy is built around five key strategic outcomes, each of which is the subject of its own chapter. These are:

1. A partnership approach
2. That prevention is better than cure
3. A clear understanding of costs and benefits
4. Understanding and accepting roles and responsibilities
5. Effective delivery and enforcement.

A partnership approach reflects the loss of state capacity and the enhanced need to recruit non-state actors to contribute to good animal health. There is a mention of the need for partners to work together to identify new disease trends. The Veterinary Surveillance Strategy is identified by the AHWS as

important in bringing this about. Reflecting new governance, these partnerships need not always involve government. ‘Groups with a common interest such as farmers, vets and retailers need to work together to achieve shared goals’ (Defra 2004a, p.19). Some examples of partnerships, some involving government, some not, are given in this chapter of the strategy. Together with this, partnership is also construed to include acceptance of responsibility. Biosecurity, for example, is one area highlighted. Partnership thus does not mean that government will sort everything out, but that partners and stakeholders have their roles to play too.

Prevention of disease is better than cure is the second key strategic outcome. Benefits of this approach include animals that are less likely to contract or spread disease, and are likely to be better economically for the farmer. For the AHWS prevention requires ‘animal owners to have the necessary skills to care for their animals, exercising good practice and using veterinary services and medicines appropriately’ (Defra 2004a, p.22). Prevention, therefore, again places a responsibility upon owners for their animals. The most important tool for owners to promote disease prevention is animal health planning. This element of the strategy does not explicitly use new governance language. It is mostly sensible advice for owners about disease prevention. However, the means through which animal health plans came to be promoted through the EIG is typical of a new governance approach, and this is discussed more fully in chapter five of this thesis.

Understanding and accepting roles and responsibilities is an interesting strategic goal. Defra is keen that everyone involved in the food chain, from the owners of animals to the food industry know what may reasonably be expected of them. 'All animal owners have a responsibility to be vigilant, report any suspicion of disease and maintain good disease prevention and control (biosecurity) practices, including compliance with regulations' (Defra 2004a, p.26) is one instance of a 'laying down of the law' in this respect. The strategy sees an enhanced role for vets, with a focus on disease prevention and education rather than the traditional approach of just treating diseases as they come to be presented as clinical cases. Furthermore, vets 'should also be prepared to support the veterinary surveillance strategy and other locally run initiatives' (Defra 2004a, p.27). This embodies the new governance approach in so far as the resources of vets are seen as something to be utilised in a common purpose of improving animal health and welfare. Data and input from vets are seen as having a use to government, reflecting, in part, years of capacity reduction in the SVS and VLA as a consequence of NPM inspired reforms.

In addition to this, Defra is very keen to set out reasons for government intervention in animal health and welfare. The strategy lays out four reasons: to protect human health, to protect and promote the welfare of animals, to protect the interests of the wider economy, environment and society and for reasons of international trade (Defra 2004a, p.29). However, as the Bovine Tuberculosis (bTB) Strategy subsequently made clear, these are criteria for determining

whether intervention should take place ‘not who should fund the intervention’ (Defra 2005a, p.39).

The fourth key strategic outcome, understanding and accepting roles and responsibilities is, arguably, the most important chapter of the whole strategy. Under this heading, principles for government decision making are given. To quote the whole passage would be too long, but it is full of the language of openness and transparency and new governance. Policy will be made in partnership with key stakeholders and be based on risk assessment. Costs and benefits will be assessed and action taken will be proportionate to that assessment. Policy will be guided by the precautionary principle and based on sound science. Indeed, ‘Science is both a driver for policy responses and forms part of the evidence base for ensuring that policy options can be effectively determined’ (Defra 2004a, p.30).

A ‘steering’ role for government is also envisaged when considering costs and benefits. ‘Government is often best placed to promote the development of best practice within industry, and co-ordinate research into animal health and welfare’ (Defra 2004a, p.31). Government’s role, therefore, is not always to do, but to bring together partners and stakeholders.

In this strategy, government makes it clear that it is not going to be the only party paying for the benefits that accrue from better animal health and welfare. Costs and benefits must be shared. ‘These costs should, over time, and where appropriate, be much more fully shared’ (Defra 2004a, p.32). However, the

strategy is clear that this will not happen quickly. Chapter five discusses how this debate has played out in practice. The costs and benefits section of the strategy reflects a move toward making the farming industry more responsible for its own health. It may also reflect a changing balance within the rural economy away from agriculture and a desire on the part of government to interpret rural issues in a wider context.

Finally, the section in the strategy that deals with delivery and enforcement seeks to emphasise the economic benefits that fall to farmers from good animal health and welfare practices. Effective delivery, for the strategy, depends upon setting priorities. Non-governmental actors have an important role to play in this process as partners and stakeholders. Farmers need to understand the patterns of disease in their sector of the industry.

Despite being a strategy that is all encompassing, a reading of it confirms the opinion that it is farmed animals that are very much to the fore in Defra's thinking. Farm Health Plans, for example, are of little use to the pet owner with a couple of cats. What comes through in this strategy is the desire to avoid future animal health crises like FMD through disease prevention measures such as FHPs and an exhortation to farmers to use good biosecurity, and a desire to keep the costs of animal health to the government under control. This strategy sets the tone, it 'steers' policy, while seeing a strong role for the industry to assume responsibilities for itself. In its frequent use of words like partnership and stakeholder and the claims made for evidence based policy making, the language is very new governance. This is supported by the

creation of the EIG to oversee the implementation of the strategy. The Animal Health and Welfare Strategy is thus very much in keeping with the ideas of new governance.

Government strategic framework for the sustainable control of bovine tuberculosis (bTB) in Great Britain

The bovine tuberculosis framework strategy is not a stand alone policy document. Its full title describes it as 'a sub-strategy of the Animal Health and Welfare Strategy for Great Britain'. As such it shares the central strategic outcomes of the Animal Health and Welfare Strategy discussed above.

In the context of bovine TB, a partnership approach entails both a recognition that wildlife transmission of TB is an important concern for farmers in heavily affected areas, and the need for such farmers to understand the importance of cattle movements in disease transmission. Prevention entails the understanding that 'All interested parties must play their part in preventing spread of bTB' (Defra 2005a, p.15). The understanding of the costs and benefits of TB control means both that government has an interest in protecting the public from the potential harm from bTB, but that also the government takes the view that farmers will also benefit directly from an effective TB policy. Consequently, ensuring that 'costs are shared fairly is therefore a long-term aim' Defra 2005a, p.15). This suggests, and is supported by other paragraphs in the document, that government was no longer prepared to accept the ever escalating costs of TB control alone. The farming industry would be expected to pick up a greater

share of the bill for any policy to control the disease. This aspect of the strategy offers the potential for conflict between Defra and farmers.

Understanding and accepting roles and responsibilities includes the requirement on farmers to be vigilant and follow good disease prevention practices and to report suspicion of disease to their vet. Both the Animal Health and Welfare Strategy and the bTB strategy include a clearly defined set of criteria for justifying government intervention 'where the market on its own cannot deliver some or all of the objectives' (Defra 2004a, p.28). The reasons which may justify government intervention are: to protect animal health, to protect and promote the welfare of animals, to protect the interests of the wider economy, environment and society and, international trade (Defra 2004a. p.29; Defra 2005a pp.39-40). However, the bTB strategy is clear that these are criteria for determining whether intervention should take place 'not who should fund the intervention' (Defra 2005a, p.39). In the bTB case, the protection of the interests of the wider economy and society is seen as understanding the value that society places on the conservation of badger populations, and on the understanding of the public of the humaneness of any measures used to implement a cull of badgers in particular areas. Government has already commissioned work at Reading University into societal values in respect of badgers (Defra 2005a, p.35). The acceptability to the wider public of badger culls is clearly an important consideration for government.

Delivering and enforcing standards effectively is also seen as a partnership enterprise. 'It requires continuing commitment from herd owners,

veterinarians, wildlife conservation interests and food businesses, as well as Government and its agencies and local authorities' (Defra 2005a). In the context of bTB, government roles include generating policies in partnership with agencies and those directly affected by the policies (Defra 2005a), presumably mostly farming interests but also wildlife, notably pro-badger, groups. In addition, the formal machinery of government was to be improved, according to the strategy, by the State Veterinary Service (SVS) becoming an executive agency from 1 April 2005 [However, note that it did not achieve agency status as Animal Health until 2007]. This, it was thought, would enable the SVS inter alia to 'develop further its expertise and professionalism … and build closer links with other operational partners e.g. the VLA' (Defra 2005a, p.41). One potentially significant change once the SVS becomes an agency is that bTB testing provided by private vets for the SVS may be put onto a contractual basis and that lay testing for bTB has been supported by the government with a pilot project to begin in the spring of 2005.

The policy document has forewords by Margaret Beckett and the agriculture ministers of the devolved Welsh and Scottish governments. While all three emphasise the importance of partnerships, there are interesting variations in the tone of each of the forewords. Mrs. Beckett focuses on the possible role of badgers in the transmission of bovine TB, perhaps reflecting the fact that the badger question is an important one in England, especially the South West. Mr. Jones focuses particularly on the partnership aspects of the process, but notes that farmers will have to bear a share of the costs of any policy that emerges from the framework strategy. Scotland is a very low incidence area for bovine

TB. It is therefore no surprise that for Mr. Finnie, 'Our priority in Scotland, where TB breakdowns most commonly result from imported animals, is to keep bovine TB out' (Defra 2005a, p. 9). The introduction of pre-movement testing in Scotland was seen by Mr. Finnie to assist in this goal. Pre-movement testing in England only came in later, as discussed in chapter six.

The strategic framework is the result of a consultation exercise on a previous document 'Preparing for a new GB Strategy on bovine tuberculosis' (Defra 2004d). The Executive Summary is careful not to set out nationwide disease control policies, seeing these as being regionally based reflecting the different disease profiles of different areas. However, it does state that 'the cattle test and slaughter scheme will remain central to controlling the disease' (Defra 2005a, p.11). Key to the development of new policies in the strategy are the effectiveness of badger culling (as determined by the Randomised Badger Culling Trial (RBCT)) and the value of the gamma interferon diagnostic test (thought by some to be more reliable than the skin test).

The Randomised Badger Culling Trial was organised by the Independent Scientific Group (ISG). The ISG was set up in 1998 following publication of the Krebs Report in 1997. Following the Krebs Report the government set out a five point plan of action in respect of bovine TB. This plan included measures to protect public health including liaison with the Department of Health to monitor M. bovis infection in humans, research into developing a vaccine for M. bovis, research into knowledge of disease transmission both within and between cattle and across species, the continuation of the cattle

testing programme for TB, and a randomised badger culling trial to test the effectiveness of badger culling in reducing TB in cattle. The ISG was to oversee the RBCT and was to advise the government on other aspects of bTB policy. The ISG reported regularly, and these reports can be found on Defra's website. The new strategy envisaged that the results of this trial would be available to ministers in early 2007. Furthermore, government is careful not to exclude the possibility 'of continuing to seek to control bTB through cattle based measures alone' (Defra 2005a, p. 29). The ISG's final report to ministers was delivered in June 2007. Chapter six discusses this in greater detail

Partnership, priorities and professionalism: A strategy for enhancing veterinary surveillance in the UK

In comparison with Defra's strategy on bovine tuberculosis, its veterinary surveillance strategy was a much more developed policy. In part, this may be because surveillance, unlike TB had not attracted significant public controversy. The consequences of failed surveillance have been plain to see, but developing a new strategy has remained largely an elite endeavour with little public participation other than by directly affected stakeholders. By contrast, bovine TB attracted much interest from badger groups. Published in October 2003, the surveillance strategy pre-dates the final version of the Animal Health and Welfare Strategy, and reflects a pattern of change in the animal surveillance sphere that had been underway for some years prior to the publication of this formal strategy. Divided into seven chapters, this strategy is short (twenty-eight pages), but contains much of interest.

‘Animal disease outbreaks can have a major impact on animal welfare, human health, farmers, the wider rural economy and the environment. Experience has also demonstrated how expensive they can prove to the taxpayer too’ (Defra 2003a, p.2). This has echoes of a number of policy problems that had afflicted Defra’s predecessor, MAFF. BSE, FMD, salmonella in eggs, E. Coli O-157 had all had an impact on at least one of these constituencies as shown in chapter three. In addition, the bill for dealing with BSE and FMD ran into millions of pounds and was significantly paid by government. These crises served to undermine confidence in British agricultural policy and to highlight the need for new policy making in that area. The Surveillance Strategy is an integral part of the Animal Health and Welfare Strategy and shares with it the five key strategic goals discussed above.

The five strategic goals form the basis of five of the chapters of the strategy. The overall aim of the strategy is to ‘deliver a transformation in current veterinary surveillance practice over the next 10 years’ (Defra 2003a, p.2). This activity will be more open than previously, justified, transparent, prioritised, and founded on quality data. An important tool in the delivery of this vision is a new computer-based system, what Jim Scudamore, then CVO called ‘a new IT solution’ (Defra 2003a, p.1) to help identify new diseases and prioritise surveillance activity.

In the introductory chapter of the strategy the scope of surveillance is defined. This refers to early warning and detection of animal disease problems, not just common infectious diseases, but also toxicities and new disease conditions.

Conditions which might affect human health also fall within the scope of surveillance. This includes conditions which ‘are inapparent in the animal itself’ (Defra 2003a, p.4). This is clearly a reference to E.coli O-157, a bacterium causing no ill effects in cattle, but serious disease in humans, with fatalities among the usual groups (the very young, the very old and the immuno-compromised). Animal disease problems such as BSE and the subsequent inquiries demonstrated the need for a strategy to enhance veterinary surveillance. It is also thought that increased travel, changed livestock systems and global warming (interestingly referred to as ‘the issue of global warming’) mean that similar threats are likely to occur again in the future (p.4). ‘The purpose of the strategy is to improve the speed and accuracy with which such threats can be identified and assessed, so that their cost and impact can be reduced, by allowing prompt and suitable intervention’ (Defra 2003a, p. 4).

The information derived from veterinary surveillance is seen as being of benefit to many groups. Government needs the information in order to devise policy on animal and human health protection. Although the strategy does not say so explicitly, there is clearly a desire to create an evidence base on which to determine policy. This also comes across in the chapter on the quality of surveillance information. Farmers are seen to benefit by the information gained through surveillance as their veterinary surgeons can use this information to help decide on a course of treatment or protection. Wildlife conservationists can also benefit as surveillance can make them aware of the threats posed to wildlife from animal disease conditions.

The strategy was developed following extensive consultation with stakeholders and interested parties. Initial consultation took place in 2000, with the first draft of a strategy published in 2002, and the current policy document published in October 2003. The strategy fits in to the wider policy landscape, being a component of the Animal Health and Welfare Strategy and relating to policies that are intended to promote a sustainable livestock sector of the rural economy.

This introduction chapter also describes, although somewhat briefly, the governance arrangements for the surveillance strategy. The strategy is presented as being in three phases with governance arrangements gradually evolving as time goes on. The three phases are strategy development, strategy implementation and ongoing surveillance activities 'once new working practices are in place' (p.5).

While the strategy was in development, governance was directed by a Project Board which included the minister responsible for animal health. As implementation gets underway, governance will be by a Programme Board which will be small and include senior officials. This board will have power over budget, target dates and quality standards. In addition to the Programme Board there will be an Advisory Board and business assurance groups which will include 'closely involved parties from inside and outside government [and] will have an opportunity to influence the way the strategy is implemented' (p.6). An even broader range of groups will be 'kept informed' using a variety of methods, although only the proposed Animal Health and

Welfare Strategy conference is mentioned specifically. The first such conference took place in 2006.

One similarity of this strategy with that for bovine TB is the insistence that government will not necessarily be prepared to bear the costs of the policy. The veterinary surveillance strategy makes clear that government intervention will continue for public health work, the interests of the wider economy and society, to secure opportunities for trade and to promote the welfare of animals. However, it is clear that government will expect other interested parties, especially the farming industry to bear a share of the costs where they benefit from the policy. Partnership comes at a price.

Chapter two of the strategy looked at the provision of surveillance data. It recognised that there is a broad range of contributors to veterinary surveillance from individual observations by farmers or private veterinary practitioners through to large scale, contract based studies into particular disease conditions, or into enumeration of livestock information. Currently, this diverse range of contributors to surveillance information is poorly co-ordinated according to the strategy. A key goal is thus to bring them together 'as a functional network of surveillance partners and collaborators' (p.8). In this goal, a new governance approach is clearly identifiable.

The benefits of greater collaboration were seen as greater efficiency in the use of resources, including directing surveillance work to the most appropriate provider, less duplication of work, and an ability to spot gaps in surveillance

coverage more quickly. In addition, data sharing becomes a possibility, with data about animal populations being used for a variety of surveillance projects carried out potentially by different data providers. However, to create a successful collaboration, potential partners require 'motivation … to ensure they remain engaged' (p.8).

Chapter three looks at prioritisation of surveillance activities. This is thought to lead to more efficient use of public money, and the reduction in surveillance gaps. An effective system of prioritisation is intended to be transparent and impact based. Disease conditions will be 'profiled' allowing comparison across diseases.

The strategy identifies a lack of clarity in how surveillance projects are prioritised and identified as a weakness of current policy. To help resolve this weakness, a central objective of the strategy is to 'develop a transparent and justifiable prioritisation mechanism by which diseases and conditions can be ranked for surveillance purposes' (p.10).

In order to aid comparison, the strategy suggests that diseases will be profiled using data and tabulated using particular (unspecified in this document) information. The assessment criteria include impact on human health, animal welfare and economic impact. Profiles will be grouped for consideration by specialist groups which will include government advisory groups but also other government and non-governmental bodies. An as yet unspecified ranking

system will be used to assign a ‘risk and impact score’ for the condition. These scores permit comparison across specialist groups.

These developments appear to be at an early stage. The precise governance arrangements are not yet set in concrete, nor is the mechanism for comparison across areas. However, the strategy does propose one innovation, a UK Surveillance Advisory Committee, which will examine prioritisation. Specialist groups would then recommend priorities within their area. Once these are proposed, government funding would be allocated to the various surveillance topics. Again, the strategy is silent on how this would be done. What the strategy does say, however, is that once government money is committed, ‘there would be an opportunity for others with an interest to contribute resources to areas of particular concern to their sector, so broadening or adding to the surveillance carried out’ (p.12). This also attracts funding from other stakeholders for surveillance activity.

Outside funding has been a part of animal health policy for some time. Pedigree sheep breeders, for example, funded a DNA testing programme to allow them to selectively breed scrapie resistant sheep (Observation at VLA North). The proposed prioritisation within the new strategy may be an attempt to contribute to a partnership approach to overall veterinary surveillance.

Potentially useful surveillance observations occur at many points within the animal health field. Observations by farmers, clinical assessments by vets, laboratory test results, targeted surveillance programmes, meteorological

observations and population studies all have utility. The difficulty, according to the strategy, is in analysing these diverse sources of information. By analysing data together with data from other sources, and with information about animal populations, these surveillance events can be 'translated into knowledge' (p.13).

The strategy sees this analysis process as a pyramid with the separate data collection events at the bottom being collated and integrated with others, and then analysed to produce knowledge. To achieve this objective, observations and results must be of a known quality (which is addressed elsewhere in the strategy). In addition, the strategy identifies a need for a new information management system called RADAR (Rapid Analysis and Detection of Animal-related Risks). RADAR will become the 'central, managing hub of surveillance related information in the UK' (p.14) and will enable early detection of potential animal health problems.

RADAR is also essential to achieving the goal of sharing information more widely. The strategy foresees that RADAR will enable 'expert users' (but it does not say who the expert users will be) to disseminate surveillance reports to stakeholders in an efficient manner. Benefits in the early detection of potential risks to human health are also envisaged. Other (i.e. non-expert) users and stakeholders will have access to reports over the internet. Access to the portal will vary from user to user. While the strategy does not make this explicit, it may be that private vets may be able to access their lab results directly over the internet saving time over posting. In addition, surveillance

profiles and other useful information will be available subject to the user having the appropriate access rights. However, the strategy does not explain who will be granted access rights to this surveillance data. RADAR will comply both with the Data Protection Act and the Freedom of Information Act. The strategy states that a balance between encouraging stakeholders to share information by assuring them of its security and deriving the benefits from transparency is required. The strategy is enthusiastic about the benefits of information sharing. 'The net effect [of sharing information] will be to deliver a step-change in evidence-based policy making in this area' (p.16).

The next chapter of the strategy looks at surveillance outputs. Outputs of known quality are important, the strategy argues, for the success of partnership working in veterinary surveillance. For this reason, outputs will be 'flagged' with a quality statement. Inputs to the system come from many sources from observations by farmers and clinical assessments by vets through to laboratory tests performed to an exacting standard. The date of the data also needs to be known. The strategy envisages a system where some outputs will need laboratory accreditation, but that value for money considerations may mean that other tests may not need to meet such a standard.

The strategy sees a central role for practising veterinary surgeons both as providers of data and consumers of it. As the quality of vets' inputs improves, so the quality and consequently usability of outputs for the vet improves. The strategy argues that veterinary training needs to include an element of epidemiology and surveillance training. The question of quality assurance in

the strategy is being considered by one of the business assurance groups involving stakeholders. One aim of this group is to consider if surveillance projects meet users' requirements including cost and time targets.

'The Veterinary Surveillance Strategy is a key component of a wider Government drive to improve the health and welfare of animals kept by man and to protect public health from animal disease' (p.21). This statement places the strategy within the context of the wider Animal Health and Welfare Strategy. The surveillance strategy aims for rapid detection of threats, open prioritisation of surveillance activities and a clear evidence base for activities and reports. Together, the strategy argues, disease control and prevention policies will be better facilitated.

The strategy argues that the benefits of such a strategy can be considerable. These benefits range from greater stakeholder engagement in various ways through to better disease detection and utilisation of a wide range of data sources. Lastly, the strategy argues that it will lead to 'open and transparent Government policy making' (p.23), part of a new approach to policy.

The Veterinary Surveillance Strategy proposed a transformation of UK practice in this area. It involves engaging more with other actors in animal health to generate a partnership approach, where government and non-government participants both contribute to the evidence base and benefit from its outputs. Reading between the lines, it may be the case that government support for surveillance may become more tightly focussed on important

animal diseases – those with large economic cost and those with human health implications. Searching for new diseases, 'scanning surveillance,' will no longer be a process dominated by passive findings from chance observations, but rather will rely upon more open reports from practising vets and farmers themselves.

CONCLUSION

This chapter has identified and discussed a number of drivers for change that led to the demise of MAFF and its replacement by a new department, Defra. While the particular facts of the policy problems of salmonella, BSE and FMD, discussed in chapter three, were clearly significant, this chapter has placed those problems within a wider policy discourse characteristic of, but not exclusive to, New Labour's modernisation agenda as manifested in the Rural White Paper, and to changes within the framework of the CAP.

Second, this chapter has looked at Defra as a new department, and the range of responsibilities that it inherited from MAFF and others. The new department brought together responsibility for the environment and for rural areas defined broadly, not just in terms of farming. Given the impact of agriculture on the environment, the attempt to exploit the 'synergies' between them, quoted above, was reasonable. Defra's aim of promoting sustainable development lent it strategic objectives that covered economic and social goals as well as concern for protection of the environment. Protection for the environment, especially the challenge of climate change, had risen in Defra's priorities as the

threat posed by climate change became better understood. In the field of animal health, Defra sought to make clear that it was not the department for farmers in the way that MAFF was held to be. Defra would be different and would work differently. In future, policy would be more open and transparent, in part to meet the criticisms levelled at MAFF's handling of BSE and FMD. Furthermore, Defra would work in a decidedly new governance way, recruiting private sector actors and stakeholders into partnerships to deliver policy objectives. Farming should no longer expect Defra to 'do' things to or for it, but would be required to be an active participant. It should be recognised that a desire to control expenditure also impacted on the move towards this collegiate approach.

Finally, this chapter has looked, in detail, at three animal health policies that emerged from Defra. It was shown that in sharing five common strategic outcomes, the new governance ethos of the department would be carried into the policy-making arena. Having looked at what the policies said about themselves, it is now time to see how they were implemented in practice. This forms the subject of the next two chapters.

Chapter 5: Animal health and welfare strategy

In the previous chapter the development of animal health policy in the aftermath of the 2001 FMD crisis was discussed and the broad features of the new regime examined. In addition, three important policy documents - the Animal Health and Welfare Strategy, the Veterinary Surveillance Strategy and the Government Strategic framework for the sustainable control of bovine tuberculosis (bTB) in Great Britain: a sub-strategy of the Animal Health and Welfare Strategy for Great Britain - were analysed to highlight themes which fit into the new policy making regime.

This chapter focuses on the implementation of two of these policies and presents the findings of empirical work into the Animal Health and Welfare Strategy and the Veterinary Surveillance Strategy. The next chapter looks at the special case of bTB. The argument of this chapter is that in its composition and method of working, the EIG is an example of new governance that can, on occasion, demonstrate its independence from Defra. In delivering the AHWS the EIG's role is one of persuasion and encouragement to industry to assume more responsibility for itself. In promoting partnership working, the EIG can claim some success for itself and, by extension, for the efficacy of the new governance. It is aided in this by the separation from this process of the main disease of contention, bTB, as this prevents EIG meetings from becoming 'bogged down' with the bTB issue. One EIG member thought that TB would be 'all we talked about' if it was covered by the EIG and didn't have a separate body (observation made at EIG meeting). An important driver for the whole

approach of the AHWS is cost. This is reflected in the importance attached to cost and responsibility sharing and also to the targeting of Defra scientific resources to industry priorities in return for greater cost transference.

The chapter begins by looking at the England Implementation Group (EIG), the body set up under the AHWS to oversee and implement it. This section is divided into two; first a discussion of processes – how the EIG was appointed and how it works, and, second, what the EIG has done. The majority of the data used in this chapter comes from interviews with Defra officials and with Helen Browning, Chair of the EIG, the published minutes of meetings of the EIG, and additional observations made at six meetings of the EIG that I was able to attend. In considering the role of science, fieldwork undertaken at two Veterinary Laboratory Agency labs has also been used.

ENGLAND IMPLEMENTATION GROUP

The England Implementation Group (EIG) is a body independent of government and set up to 'drive forward delivery of the vision and strategic aims of the Animal Health and Welfare Strategy' (EIG 2005) in England only. Similar bodies have been established by the devolved administrations. Although setting up a devolved parliament in Scotland and an assembly in Wales were important planks of the Labour Party's 1997 election manifesto, reflecting an early enthusiasm for constitution reform and finally enacting what the late Labour leader John Smith called 'the settled will of the Scottish people' (BBC 1999), devolution may, in itself, be seen as a sign of 'new

governance' structures in so far as they seek to bring decision making closer to the people that decisions affect and act as a way of engaging with important stakeholders they do meet some of the criteria for new governance discussed in chapter two. For Defra, the EIG website claims that the EIG performs its functions by 'working in partnership with government, the farming and food industries, animal owners, the veterinary profession, consumers and other stakeholders to foster wide ownership of the strategy and a shared commitment to its outcomes' (Defra 2007). In addition, the group may give advice to the CVO or to ministers on animal welfare, and it may investigate any animal health topic and publish 'advice, analysis and commentary as it considers appropriate' (Defra 2007c).

People, powers and practice

In keeping with its terms of reference the membership reflects those groups with whom the EIG is mandated to work in partnership. It is worth a brief examination of the membership of the EIG.

Helen Browning OBE, the Chair of the group, is an organic farmer in Wiltshire and presently the Food and Farming Director at the Soil Association where she is also a former Chair. The remaining members can be divided into groups; farming interests, veterinary interests, academics, and others. All biographical details have been taken from 'England Implementation Group – membership' (Defra 2005c).

Farmers are represented, by Tim Brigstocke, a former Chief Executive of Holstein UK who, on appointment to the EIG, was chairman of the Royal British Association of Dairy Farmers. Neil Cutler is a dairy farmer and former chair of the NFU Animal Health and Welfare committee. He was also a member of the advisory group that developed the AHWS. Stewart Houston is a pig farmer and, on appointment to the EIG was chair of the National Pig Association. It should be noted that these farmers are drawn from the dairy and pig industries. There are no representatives drawn from the poultry or sheep sectors.

The veterinary profession has three of its number as members of the EIG. Peter Jinman is a past president of the BVA, and a veterinary surgeon from Herefordshire, one of the bTB 'hotspot' areas. Some time after his appointment to the EIG he was also appointed to chair the Bovine Tuberculosis Advisory Group. Jinman was also involved in the development of the AHWS. Dick Sibley is also a vet and has served on the British Cattle Veterinary Association committees for Farm Assurance, Health Planning and TB, three important areas of concern for the EIG. Finally, Bill Swann has experience of animal health improvements in three continents and a longstanding interest in promoting animal welfare.

The academics are Richard Bennett, an agricultural economist at Reading University, and Sarah Wolfensohn, the Head of the Veterinary Services department at Oxford University. Dr. Wolfensohn has written on animal

welfare, including the welfare of animals used in laboratory experimentation (Wolfensohn and Lloyd 2003, Wolfensohn and Honess 2005).

The remaining members are Chris Brown, Agriculture Development Manager with ASDA, and previously a cattle specialist with MAFF and ADAS. Nigel Durnford comes from local government, a key delivery agent for the strategy, and is an Animal Health and Welfare Inspector with Gloucestershire County Council. Diana McCrea is the representative of consumers and is an independent consultant on food and consumer affairs. Previously she has worked for the Consumers' Association and has served on the Spongiform Encephalopathy Advisory Committee.

Taking these broad categories gives a balance on the EIG of four farmers, three vets, two academics, and three other members from the retail, local government and consumer sectors. The structure of the group was determined before the actual members were appointed (Interview HB). Interviewees were keen to highlight that the group does not 'represent' particular interests but that care was taken to ensure that the EIG did have members from a variety of stakeholder groups. Members of the EIG were appointed because of their individual attributes. 'The EIG membership was chosen because of the individual attributes that we thought each could deliver' (Interview Defra official 1). The spread of expertise available is acceptable to Defra. Asked if producer interests dominated the membership, the civil servant in charge of the strategy replied,

> ‘I think it’s quite mixed. You say key producers. We’ve got some key interests in there, but there are a lot of key producer interests not directly represented on the EIG. And in fact quite a few of the major associations, sectoral associations, aren’t represented on the board’ (Interview Defra official 1).

And later in the interview, ‘I think we have a good enough spread on the EIG that there’s enough challenge in there and that it isn’t livestock production dominated’ (Interview Defra official 1).

The appointment of Helen Browning as chair is an appointment with some symbolic power as she is a member of the Soil Association, surely a decisive ‘break’ with the past. However, interviewees were keen to deny that this symbolism played any role in her appointment. ‘I don’t think it’s a case of Helen being there and representing the Soil Association or looking after the Soil Association, it’s Helen being there as Helen’ (Interview Defra official 1). Browning herself also denied that her position with the Soil Association was of any help in securing her appointment to the EIG, in fact she thought that it would have the opposite effect, although she didn’t deny that there may be some symbolism in her appointment:

> ‘When I went for this I thought it might be a handicap actually. I thought that possibly I’d be seen as quite a sort of radical figure that had quite strong views about certain things, certainly about animal welfare in the past and that I didn’t think that this would necessarily wear in my favour. So, and I think a lot of other people thought that as well, there were some eyebrows raised from various people when they found that I’d got the job. So it may have been, there may have been some, erm, they may have been keen to, for it to be seen that Defra was looking in a slightly different way at these things, I just don’t know’ (Interview HB).

It is in how the EIG works that a major difference can be seen between it and the TB Advisory Group. The EIG's work tends to be carried out in public, with meetings open to any stakeholder. Working in public fits in well with Defra's aim to be more open and transparent and this is a commitment very dear to Helen Browning:

> 'When we first started I was very keen, and still am. I would rather do all of our work in public.' 'But what we are trying to do is make sure that all evidence, all interesting topics are done publicly and I have a really, personally strong commitment to that and feel passionately about it' (Interview HB).

However, not all of the group's work is done in public and some resistance was experienced at the idea of open meetings:

> 'But I have to say at the outset I had a huge amount of difficulty trying to maintain the open stance – people feeling very nervous about being viewed, about being on stage, about saying the wrong thing and it being picked up by a journalist or something. Real nervousness' (Interview HB).

It should be added that this resistance was not a consequence of there being something to hide but, by and large, normal human concern about speaking in public combined with a fear that the media may pick up on a stray remark and make a story out of it (Interview HB). However, Browning explained, 'All the nervousness that my members have had about working in public, I think are being worn away by the process of doing it' (Interview HB).

While it is the case that much of the EIG's work is public, not all of it can be. Some is carried out in private sessions for various reasons:

> ‘There are, however, some instances where we really will not get anything straight out of Defra, sometimes out of industry, if we do it in public because they’re not prepared to make a certain policy, put it into the public domain yet… And with industry some times there’s real concerns about ‘oh my God, if this gets out, it’s going to cause all sorts of problems.’ So there is a certain demand for us to do some work in closed session and my view is that that has to be absolutely minimized’ (Interview HB).

Observations of EIG meetings, and analysis of the agendas of the meetings suggest that Defra officials are happy to give update reports, or to ask for a steer from the EIG on the direction of policy in public. However, there does appear to be a reluctance to discuss contentious issues in public, bTB for example, was rigorously kept off the agenda, until Defra was close to a departmental view on it following the publication of the ISG’s final report. This is supported by interview data: ‘Where there are clear issues where something which is overly sensitive and we need to take a briefing and can’t be public yet we will do privately’ (Interview HB). This is not to say that EIG meetings are wholly sterile with pre-agreed policy announcements being read out. There are times when debate is quite heated and conflict and disagreement do break out. These, as will be shown, tend to be on issues of process rather than on policy. It is the case that so far the EIG has yet to take a position that is wholly at odds with Defra’s view or with that of the farming industry.

While civil servants will address meetings of the EIG, ministers have so far not done so. However, it is not an impossibility that a minister may address the group. While the chair may see the minister in private the circumstances in

which a minister would make a public presentation to the group seem limited. Asked if the minister would come and speak in public, Helen Browning said,

> 'What, you mean have him come and give evidence, as it were in a public session? I think it's less likely [than having a civil servant come], but not impossible. We haven't made a request for him to do that and I think that it's probably less likely that he'd want to do that. But at the same time I think government is generally trying all the time to open up and not be doing things behind closed doors with smoke and mirrors. So it wouldn't surprise me if we had a real issue around something and felt it important to have him in, as it were, that he might attend, but it's much easier to do it with the civil service' (Interview HB).

It seems unlikely then that a minister would present to the group. Indeed Browning is 'not convinced that it will happen' (Interview HB).

What are the powers of the EIG? After all, it is the body with responsibility for implementing the AHWS, and so it is surely the case that it has a range of powers available to it in order to do this task. However, this is not the case. The EIG has no formal powers at all, and nor do its members, or at least its chair, seem to want any. The civil servant then in charge of the AHWS had this to say about the powers of the EIG:

> 'It can name and shame and, of course, the chair can write to ministers, to heads of departments, whoever just to say what the dissatisfaction is and that's where the challenge comes in. And therefore, no powers as such, so it's all down to influence' (Interview Defra official 1).

Influence then is the primary power of the EIG. This is in keeping with ideas of new governance. The EIG has no powers to insist, merely to persuade and

encourage. Helen Browning is comfortable with this position. Asked if she would like some formal powers she replied,

> 'No. I don't think I would particularly. I don't feel particularly hamstrung by the fact that we don't have any power. Some group members were very nervous about this at the outset, given all this responsibility and that's one of the reasons we had a quite extensive discussion over our terms of reference, that we cannot take this responsibility without authority and I very much accept that in many ways. But I think there is nothing more powerful than the ability to stand up and say, you know, we are advising and challenging in this area and we do not think this is good enough. So I think it's about us creating our own authority and that comes from doing sensible things and being respected for how you've approached things and how you've resolved things, rather than because we can legislate or we can advise on regulation or whatever it might be. I think we have to create our own authority as everybody does in this world really' (Interview HB).

So once more, power is very much the soft power of position and persuasion. Part of this power is vested in the position of the chair who has the right to see ministers or the CVO about issues of concern, the other part is in the collective ability of the EIG to 'name and shame.' This latter power is not one that, through its chairman, it is in any hurry to use: 'One would always escalate through a series of processes anyway' (Interview HB). Public conflict would be the very last resort, and the group prefers to use its powers of persuasion and facilitation in order to direct in the right way. In an interview it was suggested that going public and putting a matter in the press would be the EIG's 'nuclear option.' Browning agreed:

> 'Absolutely. In terms of us really standing up either against the industry or go against government and saying 'hang about guys you've got this wrong, fundamentally wrong.' It's not a good thing for us to be doing with the people we're trying to work with either in partnership within the industry or within the companion animals

> sector or whatever. If we go out and say 'The Dogs' Trust is really up the creek on this' without having previously discussed it and trying to get movement in other ways, we're going to alienate stakeholders. We are best, I think, trying to resolve as much as we can by bringing people together in a sensible setting and trying to find common ground and a way forward rather than going nuclear' (Interview HB).

From this quote it can be seen that, for the EIG, alienating stakeholders is something to be avoided. Progress is achieved by discussion and agreement. However, this approach does have the consequence of preventing the group from driving policy forward at a pace faster than stakeholders are prepared or can be persuaded to go.

Definitions

The task of the EIG is to drive forward the Animal Health and Welfare Strategy. The EIG itself is a child of new governance and, as such, is supposed to broaden participation by stakeholders in an open and transparent process of working in partnership. The limits to what can be made public have already been discussed. Here, consideration is given to understanding some of the various terms used in the strategy: health, welfare, stakeholder and partnership working and how they have come to be understood by the EIG.

The very name of the strategy includes both the words 'health' and 'welfare.' It is thus reasonable to suppose that these must be distinct concepts. Yet research for this chapter suggests that, for the EIG, forming a distinction between them is problematic. This may not be a problem confined to the EIG. At the very first EIG meeting the question was posed 'whether the consumer

(note the use of the word consumer rather than the public) really understands 'welfare' as a separate concept to 'health' (EIG 1 minutes). Interview and observation of meetings of the EIG suggests both that within the group there are various understandings of the terms and, importantly, health is seen as more important when speaking about farmed animals, while welfare is a bigger consideration in respect of animals kept for purposes other than food such as companion animals (pets) and laboratory animals.

Asked about the distinction between health and welfare EIG Chair Helen Browning replied,

> 'Oh, dear! We decided at the first meeting that we'd try and nail this because it was such a potentially contentious thing that was going to haunt us forever. We never have actually got round to nailing it' (Interview HB).

So within the EIG there is no shared understanding of exactly what the distinction might be. Browning was clear that 'An unhealthy animal doesn't have good welfare' but was equally clear that, for her, welfare extended well beyond just being healthy:

> 'It is about a much more positive mental, at least making sure that there's no mental suffering and the ability of the animal to have a degree of autonomy and to exhibit its natural behaviours and all that kind of stuff. So, you can see it as health being completely subsumed within welfare. Welfare is the term we could use' (Interview HB).

Browning also took the view that 'You can usually make a business case on health.' This was something that the vets in particular on the EIG often emphasised at observed meetings. For farmers to act in ways that the EIG

would like them to act required that the benefits could be shown in increased productivity. The 'bottom line' was, for vets, a key driver of improved animal health. In short, a healthy animal is a profitable animal.

Looking further at the distinction between health and welfare it appears as though they are definitely related concepts yet a tension can be observed between them in respect of farmed animals. Browning sees health and welfare as 'overlapping circles'. Health is seen as the most important as a business case can be made for health. Welfare, in so far as that moves beyond health, is a vaguer concept encompassing the sorts of things that Browning spoke about, of keeping animals happy, of letting animals express their natural behaviours. Here the tensions become clear. Better welfare does not necessarily lead to a more productive, and consequently more profitable animal. For Browning, 'That's [welfare] the area where it is much harder to make a cost benefit analysis without going to the market place for support. That's the way it's breaking down in reality, I think' (Interview HB).

The sort of market support that she has in mind covers various labeling schemes of which more later. For now, schemes such as the Soil Association's organic label or the RSPCA's Freedom Foods label attract a price premium for higher standards of welfare. Strictly speaking, the Soil Association scheme is not a welfare-based scheme but organically reared meat is perceived by consumers to have a higher welfare status. For welfare to assume a higher profile in the general regulatory framework of animal health in the context of intensively farmed animals could, potentially, amount to a challenge to the

whole basis of intensive agriculture. Browning acknowledges that progress on welfare is likely to be slower than progress on health:

> 'Given the constraints of where we are and what mechanisms are going to be used to take us forward we're not going to end up running ahead of the regulatory base that's provided through Europe, it's just not going to happen…But, …in order to make progress we're going to have to stick in that basically health box, making sure we allow and give a structure whereby welfare can be improved through market support' (Interview HB).

The conclusion that can be drawn is that improvements are more likely to be seen in health, with welfare improvements coming either as the EU regulatory regime alters or as a consequence of more people being able and willing to pay a premium price for meat produced to a higher welfare standard. Demand for premium products can sometimes be increased. At one EIG meeting, Chris Brown of Asda noted that his supermarket sells a lot of premium beef and very little of its 'value' beef. Yet, with chicken, almost all the chicken Asda sells is from its cheapest ranges and very little premium chicken is sold. The reasons for this may be complex and possibly reflects the demography of Asda's customers; perhaps the situation is not replicated in Waitrose. However, one possibility is that the health scare associated with BSE in beef has prompted customers to move to a premium product in the belief that it is less likely to be positive for BSE. Yet, from a welfare perspective, chickens experience far worse farm conditions than beef cattle. It appears that, for Asda customers at least, they are prepared to pay a higher price for perceived reduction in health risk, but not for an improvement in animal welfare standards, a process likely to continue should the economy move into recession despite high profile

campaigns by celebrity chefs to highlight the plight of the intensively farmed bird.

Stakeholder is another term that, in the context of animal health policy, has no clear, agreed definition. Respondents asked how they understood the term tended to begin by saying ‘erm’ and then pausing for a bit of a think. The usual order in which stakeholders are named begins with various farming industry bodies, then professional bodies such as the British Veterinary Association. Wildlife groups such as the Badger Trust were mentioned in the context of bTB. The public was sometimes mentioned or, if not, was readily agreed to be a stakeholder when prompted.

However, the public is usually understood to be a rather passive stakeholder. It is assumed to have an interest in animal health in so far as that overlaps with human health. This interest does not require the public to actually do anything; by implication this interest is taken care of by the strategy’s acceptance of the need for government to intervene in order to protect public health. For most stakeholders, the public is taken to mean consumers. The ways in which the public may engage in debates on animal health issues through membership of campaign groups did not appear to be recognised. Indeed, with the exception of mainstream groups such as the RSPCA, animal welfare and certainly animal rights groups that challenge intensive agricultural methods were not accepted as stakeholders by interview respondents.

It is as consumers that the public is constructed in the field of animal health policy. That is not to say that the public is absent from EIG considerations. Concern was expressed at an EIG meeting about the role that the media played in generating public concerns. In addition, the minutes of the very first meeting note that in respect of public opinion there may be a role in identifying priorities for the EIG.

> 'To what extent does this [public opinion] determine our priorities, how do we reconcile the different assessments of priorities that may occur between public opinion, the industry and the EIG?' (EIG 1 para. 33).

But, this apart, it is as consumers that the public is understood. At the EIG conference there was a session on consumers. Discussion in that workshop centred around emphasising the quality and the high standards that farming groups claimed pertained in the production of British meat. The clear objective for the workshop was to promote ways of getting people to buy more meat and getting them to buy British rather than imported meat.

However, the public were not regarded by the EIG as being the primary stakeholder. Again at their first meeting the group discussed how they could make a difference and make an impact. In the group discussion, 'The group recognised the need to develop the confidence of producers generally and in turn win their trust' (EIG 1 para 21). So, to be successful, the EIG requires the confidence and trust of producers. Consequently, the EIG is not set up to be, and can never become, a critical voice outside the realm of stakeholder opinion. This reinforces the role of the EIG within a network context as one of building relationships with producer interests rather than with critical voices.

The final concept that poses problems of definition is partnership working. The necessity of there being a partnership between Defra and producer interests has already been alluded to in the fact that the EIG is reluctant to engage in a criticism of intensive agriculture. Partnership was also put forward as an alternative to more formal methods of managing agriculture. 'DD (senior Defra official) agreed that partnership was more effective than regulation' (EIG 2 para.37). Interestingly, and reflecting the language of the AHWS, 'DD observed that partners need not be equals; it was a matter of clarifying roles and responsibilities from the outset' (EIG 2, para. 40).

Partnership working is such an important idea within the AHWS and therefore also for the EIG that a report on it was discussed by the group. 'Principles of Partnership' was presented to the EIG's third meeting. This report took its definition of partnership working from an earlier report of the Public Services Productivity Panel in 2002. There, partnership was defined as:

> '[A] group of stakeholders brought together from a range of organisations, to be responsible for tackling mainly long-term challenges and opportunities in which they have shared interest' (PSPP report quoted in DP7).

Crucially, the EIG report notes that partnership requires agreement on common goals. Clearly, therefore, without such agreement on an agreed common goal there cannot be partnership working. Groups who may have an interest in an animal health problem can be excluded from a partnership if they do not share the goals common to the other partners. The report was also keen to emphasise

that a partnership must have 'the right people' that could utilise each partner's particular strengths. Trust among the partners was also highlighted as an important factor in securing a successful partnership, including recognition that some situations would require a willingness to compromise and to accept solutions where any one partner would achieve only a proportion of their goals. This approach was broadly welcomed by EIG members and, at one meeting, by stakeholders present. However, at a previous EIG meeting, one stakeholder raised a concern from the audience about Government's approach:

> '[F]armers find Government's suggestions for partnership difficult, although Government espouses partnerships their policies go against this, for example, the impact of bovine TB policy on their livelihoods' (EIG 2, para. 43).

It is not possible from the data collected in this project to give a definitive assessment of how typical that response was of farmer attitudes to partnerships. However, it is interesting that this participant explicitly raised the question of bTB. As will be shown in the next chapter bTB represents the biggest barrier to success of the AHWS, and continuing Government reluctance to approve a cull of badgers has served to undermine the trust that, according to Defra and the EIG, is essential for the successful working of a partnership. When looking at partnerships, there appears to be broad agreement in Defra and on the EIG, about what, in practice, a partnership should be. Defra was not an essential partner in all cases and when it is, it does not always have to be the lead partner. In addition, Defra does not always have to be the partner who supplies the financial resources to a partnership. Important characteristics of a partnership include good management and trust between

partners. Most importantly, a shared common goal is required. Stakeholders at an EIG meeting noted that management was the key to success and that poorly managed partnerships could aggravate a situation (EIG 3, para. 107).

THE WORK OF THE EIG

Having looked at the composition of the EIG and its ways of working, and discussed some of the problems of defining key terms used in the AHWS, it is time to consider how the EIG has operated in practice on a number of issues to which it has given its attention. The issues discussed in this section are by no means an exhaustive list of topics that have come before the EIG. Performance Indicators are frequently used by Government as a management tool and so it is important to look at this tool of 1990s NPM in the context of a structure that represents an evolution from NPM managerialism. In addition it is an example of where the EIG staged something of a rebellion and sought to establish a degree of independence from Defra. Cost sharing is a key theme in the AHWS and has been one of the EIG's most frequent topics of discussion. Regional difference was chosen as the EIG is the body responsible for the AHWS in England alone. In addition, because different regions of England have different farming profiles, they also have different disease priorities. Bovine TB is an important problem in the South West whereas this is not the case in North Yorkshire beyond the obvious point of wishing to prevent its introduction into the region. Farm Health Planning was chosen as it is one of the main mechanisms to deliver improved animal health. Finally, labeling was chosen for various reasons. It illustrates the extent to which progress on animal health

and welfare is unlikely to proceed at a pace faster than that accepted by the industry. In addition, the variety of schemes in place has resulted in a confused picture for the consumer, and finally, labeling is a means by which British farmers seek to differentiate their product from what they see as inferior imported meat.

Performance Indicators

The first appearance of performance indicators as an agenda item for the EIG was at its fourth meeting, held in York in November 2005. Eddie Routledge presented the group with a thirteen page report arguing that 'The EIG needs to agree how it will measure progress towards the Vision set out in the AHW Strategy... In effect the EIG will need to 'own' the indicators, at least with regard to progress in England' (Paper DP13 presented to EIG 4, p.1). This was because the indicators could be seen as providing 'a framework for measuring progress [of the AHWS] and could well be seen as a measure of the EIG's progress' (EIG 4 para 32). Despite such warnings that the indicators could be seen as a measure of progress 'They [indicators] are not meant to be used for complete policy evaluation nor to demonstrate cause and effect' (Paper DP 13, p.4). In addition, they should not 'become outcomes in their own right (e.g. Hospital waiting lists)' (Paper DP 13, p.4).

This presentation seemed to cause a degree of confusion among the EIG members. On the one hand indicators had to be owned by them as they represented the means by which their progress would be measured and on the

other they were not to be used as a means of policy evaluation, nor were they to be indicators used in the sense of targets, returning again to the hospital waiting list model. Further difficulty was caused as profitability was proposed as an indicator. Stuart Platt (Defra) who presented with Eddie Routledge, said that this indicator was included as rising animal health and welfare would lead to rising profitability (observation made at the meeting and also noted in EIG 4 para 38). The desire to include profitability arose from consultation with Defra's Animal Health Directorate General.

EIG members were not happy with the presentation. In particular members were critical of having indicators which supposedly measured their progress when they had no formal powers to control anything. Bill Swann and Dick Sibley, both vets, made this point; Sibley arguing that to have ownership of a thing requires responsibility also (observation made at the meeting). In addition, Richard Bennett noted that few of the indicators could be seen as indicators of the success of the strategy itself let alone of the EIG (EIG 4 para 43). Furthermore, some of the disease indicators were for diseases for which little surveillance data was available. Dick Sibley again, noting that mastitis was included when no surveillance for the condition was available. He could also have mentioned that it is a condition with a varied aetiology, although often introduced via poor parlour hygiene. Other contributors mentioned the lack of indicators for companion animals. This lack, in a document with 11 'headline' indicators and 25 'core' indicators, was thought surprising but may simply be a reflection that for all the supposed scope of the AHWS to cover all animal health and welfare questions from farmed to companion animals, the

main focus of work was always and necessarily going to be on the farmed sector.

At the end of the debate the Chair suggested that the EIG discuss the matter further. A one day workshop was held and, although the workshop was mentioned as a matter of report at a subsequent EIG meeting (EIG 5, para 4) the matter didn't come before another meeting held in open session. The final published indicators accepted many of the EIG's criticisms. The number of headline indicators was reduced to seven, reflecting the six strategy visions plus another headline indicator concerning partnership working and the number of core indicators reduced to 18. Furthermore, the document makes clear that the indicators are not targets.

> 'These indicators are not intended as targets for action but rather to give a snapshot of the "state of the nation" of animal health and welfare in England such that people can see if the country is on track towards the world described by the Strategy. These indicators do not take the place of detailed evaluation of policies nor provide "cause-and-effect" explanations for changes in the state of animal health and welfare' (EIG web page).

One problem that remains with the indicators is that of populating them with data. Nine of the 18 core indicators are marked as 'under development' as is the seventh headline indicator on partnership working. Helen Browning is clear that populating the indicators is a problem (Interview) but does not seem clear how progress towards that goal will be achieved. The lack of further agenda items on indicators suggests that Defra too is unsure how to obtain data for some of these questions.

In being unwilling to accept Defra's original proposals on indicators, the EIG can be seen to have staked a claim to a degree of independence from Defra. What has emerged is that the EIG is now not 'responsible' should any of the indicators not be met. Indeed, one Defra official took the view that in fact the indicators should be used by the EIG 'to judge others' (Interview Defra official 1). In general, indicators as a whole seem to have been reduced in importance for both the EIG and Defra so far as animal health is concerned. The focus has been much more on Farm Health Planning and Responsibility and Cost Sharing than on indicators. This is almost certainly caused by a combination of EIG reluctance to go down the indicator route as a measure of performance and difficulties in obtaining sufficient data on disease conditions that would give any meaningful basis for discussion. This latter difficulty stems from Defra's approach to veterinary surveillance and collection of this data of which more later when the Veterinary Surveillance Strategy is observed in operation in two Defra laboratories.

Farm health planning

Both Defra and the EIG believe that changing behaviours is the primary means to ensure improved animal health and welfare. One tool which it is hoped will promote changed behaviour is the Farm Health Plan (FHP). Defra sees FHPs as an example of partnership working (Paper IP 7 presented to EIG 5, para 1). A Working Group was established which included a wide representation from the farming industry to progress FHPs.

For Defra ‘Farm health planning is a proactive approach to positive animal health incorporating animal disease prevention and control’ (Paper IP7, p.2). This approach incorporates recognizing disease risks, biosecurity and the identification of cost effective measures to contribute to farm business planning. A significant element of FHP is the use of vets to advise farmers on good practice. For this reason vets are very keen on FHPs as they could provide a valuable income stream in the context of a profession where large animal practice is being reduced across the country and there are fears that the number of practices offering large animal medicine could continue to fall.

The key selling point of FHPs is that they are held to deliver an economic benefit to farmers. This benefit arises through good biosecurity and other practice which reduces the incidence of disease in the first place. In theory FHPs are already commonplace as the various Animal Health Schemes and Farm Assurance Schemes already require farmers to have a plan.

However, there are two problems with this approach. Firstly, farmers tend to see FHPs as a cost to themselves rather than as a means to better economic performance. Consequently, they tend to be done as a mere ‘tick box’ exercise as required by the various schemes come inspection rather than as Defra would like to see, as a living document. This story from a Cumbrian vet on being asked about FHPs is typical:

> ‘We tend to get phone calls saying, “I need a Health Plan, the Assurance Assessor’s coming on Wednesday” [laugh]. So we whip out the laptop and try and put something together. The success of my approach of saying, “Right, come in here we’ll sit at a desk and

> we'll go through it." I would think I might have had five do that. The rest seem to expect you to do it from their own memory of their situation. And they just want something to keep the assessor happy' (Interview Practice Vet 1).

As is this story from a different vet on being asked if he was involved in preparing farm health plans:

> 'Oh, yes, yes, we um, two or three of the practice have been off on the appropriate courses and so we do a lot of the herd health plan filling in. I don't personally, I've managed to avoid that one, but Vet and Vet and Vet do a lot of it and it is quite time consuming, but useful for all concerned.
>
> AS And do you see that as a way of reducing disease incidents in the medium term?
>
> Not really, no it's, it's really just a paper filling exercise and I don't think it's had any positive benefit on the usage of drugs on the farm or disease incidence at all. No, it's more of a passive recording of what has gone before rather than active planning for what should come' (Interview Practice Vet 2).

So farmers are not exactly knocking down the door of their vet practice to demand farm health planning and nor, from the second vet's comments are some large animal vets convinced that FHPs are particularly effective. At one EIG meeting where FHP was discussed, David Main of Bristol Vet School said that farmers do not seem to be willing to act upon the results of a review and that generally there seems to be a problem getting farmers to have FHPs (observation at EIG 5).

The second problem facing FHP is that the schemes that do require a farmer to have a plan do not set especially rigorous standards. Generally having a plan is sufficient even if record keeping is not up to date or the plan not used or acted

upon. The Red Tractor Scheme is industry owned and run and so ‘Standards are pitched at a level to complement legislation and include the codes of good agricultural practice’ (EIG 5 para 89).

If FHPs are to be a success then it will need to be on the basis that they deliver real economic benefits to farmers. Improvements in health and welfare alone without economic benefit will not be enough. There is a general belief that FHPs will deliver benefits to farmers and adoption of FHP varies across sectors. The pig sector has for some years promoted FHP to good effect while the dairy sector lags far behind. In an endeavour to show a positive cost benefit analysis Defra has funded a scheme to demonstrate the benefits of health planning. Richard Bennett of Reading University and an EIG member has run models with BVD which demonstrate that incurring costs such as vaccination does deliver economic benefits by reducing losses through mucosal disease and abortion. The problem remains one of getting the benefits understood by farmers. Although FHP has its own Working Group involving industry, ordinary farmers have yet to be persuaded of the merits of FHP. This may constitute a major reason for AHWS not delivering the improvements in animal health and welfare it hopes for.

Regional Difference

The EIG does not hold all of its meetings in London. Rather, it tries to hold several meetings in the various English regions. At these meetings, there are speakers from the region concerned who give a flavour of what is happening in the particular region. There is a widespread agreement on the need to have a

regional perspective as animal health problems vary across the regions. A survey of government offices by Defra revealed significant regional difference. Bovine tuberculosis was mentioned by many regions, while avian influenza was mentioned only by the eastern region. (EIG 8-9, 2006). Kate Sharpe of the, then, State Veterinary Service (now Animal Health) explained that the 2001 FMD outbreak had allowed much to be learnt about regional difference (EIG 4 para.63). Sharpe said that the SVS was working in partnership with many stakeholders to tailor the AHWS to the needs of the local animal profile and that a pilot study had been undertaken to explore this (EIG 4 para. 65).

Other government bodies also had a role to play in delivering the AHWS. Again at the York meeting, Gordon Jones from the Government Office of the North West explained that each government office was implementing the strategy in different ways (EIG 4 para. 55). In addition, although the government offices were ready to play a role in animal health, he did not think that they would be able to offer a leading role.

One alternative was to use small-scale projects that required little coordination. One such scheme focused on tackling the problem of sheep scab, a significant problem in Yorkshire. This was an example of where a consultant with support from the regional SVS had managed to coordinate the efforts of local farmers and vets in support of an effective protocol to tackle the disease. The key to the success of the scheme was buy-in from both farmers and vets to ensure that proper procedures were followed as scab could quickly become re-established if even a few farmers stopped participating.

The picture across the regions varies, and not just in terms of disease profiles. At a meeting in the West Midlands, for example, there appeared to be a problem in coordinating efforts within the region with local leadership lacking (EIG 9 para. 40-41). What is clear is that the regional picture is complex and that there is significant scope for local innovation to tackle locally determined disease priorities.

Labeling

One way in which meat can be marketed as a 'welfare-friendly' product is by using labels to differentiate one product from another. However, as one EIG meeting learned, there are so many labeling schemes that consumers can become confused. Furthermore, labeling schemes are not just used to promote welfare benefits, the idea of 'locality' is also promoted by the use of labels. The Soil Association has a label for products certified by them as organic, the RSPCA has a 'Freedom Foods' label that advertises a higher welfare standard.

Assured Food Standards (AFS) runs the Red Tractor label. Their scheme sets standards for good agricultural practice and assessed every aspect of the production chain that had a bearing on food safety or the health and welfare of animals. Over 70,000 farms are certified by the AFS, covering some £5b worth of British produced food (EIG 5 para. 88 - 89). The scheme is owned and managed by the industry itself. The Red Tractor, therefore, makes some sort of claim to 'quality.' However, when questioned by EIG member Sarah

Wolfensohn, the spokesman for the AFS admitted that the standard that was assessed was based on existing industry practice and legal requirements. It was not a 'premium' label as such. Furthermore, farms failing an inspection have a grace period to rectify their errors and do not lose scheme membership in the meanwhile (observation made at the meeting).

EIG member Diana McCrea considered that there was 'information overload' in respect of labels. There were many different labeling schemes in place, each with a different message – organic, locally produced, welfare premium, etc. Presently 'there are too many gaps between consumers' expectations and what the schemes provide' (EIG 5 para. 99).

From the perspective of the AHWS, labeling potentially offers a way of achieving a 'welfare premium.' However, as has been shown, this is hard to achieve where no standardization of labels exists. However, McCrea argued that labeling does offer the prospect of a 'win-win' for consumers and producers delivering higher welfare (EIG 5 para. 100). The problem is that no one seemed at all sure how to bring this about, reflecting, perhaps, the lack of a single body with overall responsibility.

Responsibility and cost sharing

One of the key themes of the AHWS is the idea of responsibility and cost sharing, of balancing the costs and benefits of animal health and welfare between the industry and the taxpayer. The EIG has examined this question

several times. Responsibility and cost sharing is a difficult issue. Early discussions in May 2006 appeared to suggest that industry was unsure as to what was being offered or demanded (Presentation by Stewart Houston at EIG 7).

By November 2006, Defra at least, had a clearer idea of how it wanted to interpret responsibility and cost sharing. For Defra, this was a key theme in the AHWS and was concerned with altering the balance between government and industry and offered an opportunity to promote disease prevention, and a greater alignment between risk ownership and responsibility for managing the risk of a particular disease. The budgetary constraint of the Comprehensive Spending Review, were a 50% saving in the animal health and welfare budget had been identified was also highlighted as a driver in the process of shifting some responsibilities and costs from government to industry (EIG 10 presentation by Stuart Roberts). Ten principles of responsibility and cost sharing were given including sharing cost only when there was a clear benefit to industry and that where costs were shared so could responsibility.

A consultation document was issued in December 2007. This document reported on some already existing schemes where responsibility but not costs had been shared. These included the emerging diseases of avian influenza and bluetongue (Defra 2007, para 4.2 and 4.4). On cost sharing, the consultation document admitted that the phrase can ‘provoke strong reactions’ (Defra 2007, para 7.2). At the time of writing, the sub group appointed by the EIG to consider this issue was awaiting collation of the 73 responses received to this

consultation. Once collated, there would be final decisions on what responsibility and cost sharing would look like.

Of the issues discussed at the EIG, responsibility and cost sharing has provoked most controversy, with the exception of bTB. Some industry figures see the process as little more than passing on costs (observation of comments at EIG meetings). However, for Defra and the EIG, responsibility and cost sharing offers the possibility of a significant improvement in animal health and welfare, delivered in a partnership manner in keeping with the vision of the AHWS.

VETERINARY SERVEILLANCE STRATEGY

This section discusses how Defra has changed its use of science in delivering veterinary surveillance. As noted in the methods section in chapter two, two VLA laboratories were visited, each for a period of two weeks. The experience and observation of these labs at these times was able to be compared to how the VLA worked prior to 2000, the point at which I left having served for 11 years in one of the VLA's regional laboratories. It was also possible to interview Roger Hancock, one of the directors of the VLA.

Prior to 2000 the VLA had been in a phase of contraction. Labs had been closed at Liverpool and Lincoln during the late 80s and 1990s. The focus of the work was for each lab to provide a comprehensive diagnostic service for its local practice vets. Thus each lab did its own microbiology, biochemistry and virology with each centre acting as an expert reference lab for the rest in a

specialist area. So Penrith, for example, was expert on fish microbiology and Langford expert on mycology. Service to the local vet was the primary objective. Service to Defra, or indeed to the Central Veterinary Laboratory to which the regional labs had been joined in one agency in 1995, was a distant second order priority.

Surveillance data was collected passively. That is, what was recorded was what came through the door. Vets do not have to report mastitis cases for example, nor determine the aetiology of an individual outbreak, and most do not. So data on mastitis as discussed above in relation to indicators was patchy at best.

In the late 1990s there was some change to this passive approach. Diseases with a strong human health impact such as salmonella and, following the 1996 outbreak in Lanarkshire of E coli O-157, that bacterium became subject to active surveillance. Defra wanted to know 'what was out there' and as Defra was and is the VLA's major customer the VLA obliged. Visits would be arranged to farms to test animals for these conditions. Access to the farms was arranged in consultation with the farmer's own practice vet. This is an example of the importance of personal relationships based upon trust. VLA vets would know practice vets well as they spoke to them often, would know some of them socially too. These relationships were based on the fact that the practices which used the VLA often would be helped by the VLA's complete service and would be willing to help the VLA as well.

The other change that had started to come into effect by 2000 was that services were gradually being rationalized. Not every lab in VLA would do every test. Cost was the driver behind rationalization. It is much cheaper for one lab to do 2,000 ELISAs than for ten labs to do 200 in a day for example. So, serology was rationalized as was biochemistry and media production. These rationalizations were not popular with VLA vets in regional labs nor with practice vets whose personal fast complete service was being taken away. All private vets that I interviewed were unhappy with the loss of biochemistry from their local VLA lab (Interview Practice vets 1, 2, and 3). The consequence of this rationalization was that the VLA was used less by practice vets and that the VLA missed out on important surveillance data (Interview VLA laboratory manager).

On returning to the VLA in 2005 for fieldwork it quickly became clear that the focus of the labs had changed. No longer was the private vet the primary customer but Defra. This culture change appeared to have become embedded in people's way of thinking so far as it was possible to tell. Certainly so far as management of the local labs was concerned but also at lower levels though in both cases with reluctance. I visited VLA North in March 2005. In 2000 the place would have been really busy, too busy, mostly with ovine foetuses submitted for diagnosis. But in 2005, although there were some, the whole place was quieter and calmer than before. Submission numbers were greatly below what was common by 2000. What had changed was that instead of offering a diagnostic service, the lab had branched out into more high tech

areas such as gene sequencing and bTB culture that were in line with Defra priorities rather than with private practice priorities.

This change within the VLA from regarding practice vets as their most important customer to seeing Defra in that light was confirmed in an interview with a VLA director. Asked if he had noticed any changes in approach since Defra replaced MAFF, the director said:

> 'The change from MAFF to Defra has had little visible effect on the VLA other than perhaps to make, you could say that Defra is actually much more,um, risk aware as far as things such as the 2001 epidemic is concerned and therefore has contingency plans in place itself which of course we're tied into. I have noticed very little difference, um, in Defra as a customer as opposed to MAFF as a customer. (Interview VLA director).

There was evidence, however, that the 2001 FMD epidemic had resulted in significant change within the VLA.

> 'The Chief Veterinary Officer's number one priority is to avoid an animal health crisis similar to 2001 so we have prioritised the diseases which she wishes to avoid. We have a contingency plan for each of them, some of which, as I say, we're the primary owner of, some of which Pirbright is the primary owner of' (Interview VLA director).

These contingency plans were referred to as 'disease templates' and were in place for all major Defra disease priorities. However, although the director thought that there were some differences in policy style, he was not convinced that Defra was markedly different to MAFF so far as the VLA was concerned and that changes in policy style could be observed from the days when the VLA was an agency of MAFF rather than Defra. Asked what changes he had observed, he replied:

> ‘To my mind there appears to be a much wider consultation on policy than there was previously. There’s much greater involvement of stakeholders. We already could feel that MAFF was becoming progressively less secretive in its working; Defra has gone on from that to become very open and in fact the current Chief Veterinary Officer did come in saying that she had breathed the oxygen of openness and transparency in the Food Standards Agency and she intended to continue that in her role in Defra. So, yes, there is definitely a much more open and consultative process through which policy is developed’ (Interview VLA director).

There was one significant difference, however, although the difference had not been experienced much by the VLA itself:

> ‘Possibly one of the most significant is that animal health and welfare is only a small part of Defra’s remit and therefore the Director General who looks after our area of interest, the Chief Veterinary Officer, is a relatively smaller player than the Chief Veterinary Officer was in MAFF. But that too hasn’t had any visible impact that I’ve been able to see’ (Interview VLA director).

During the two periods of fieldwork at VLA regional laboratories it was possible to observe how these changes had affected the day to day working of the labs. The emphasis on Defra as a customer had resulted in much work being structured around six themes which ‘simply reflect ministerial priority’ (Interview VLA director). The three largest programmes are for Transmissible Spongiform Encephalopathies (TSEs) and Statutory and Exotic Bacteria which includes the VLA’s work on both research and diagnosis of bTB. Third is the Emerging Disease Programme which covers what is known as ‘scanning surveillance’ to find out the incidence of disease and to detect any emerging new diseases.

These priority areas had affected the work that the regional laboratories carried out. At both regional laboratories there was space set aside for the culture of bovine tuberculosis from lymph nodes. This was relatively new to both of these labs and in one case had resulted in the construction of a separate building to house the work as such cultures require a high level of biosecurity. In addition, at one laboratory, work was taking place to refit one of the laboratories to carry out the gamma interferon test for bTB. At VLA North, there was a dedicated laboratory for molecular microbiology. The centre had established this laboratory to carry out testing for a gene in sheep that made the animal susceptible to developing scrapie. However, this work was no longer done at VLA North; instead, the lab had been designated a centre of excellence for molecular biology and carried out genetic testing for a variety of diseases.

At both laboratories, the organisation of work had changed to reflect the changes in priorities that had resulted from Defra's approach to animal health. Staff, too, recognised that change had occurred and were aware that Defra was now their biggest and most important customer whereas, in my time in the VLA, most considered the diagnostic work for the private vets to be the most important aspect of the work. However, although staff recognised these changes, most were not aware that they had been prompted by new animal health policies and some were unaware of the existence of the AHWS, Veterinary Surveillance Strategy and the bTB strategy. One exception to this was the officer in charge of bTB work at VLA Midlands who had read the bTB strategy and had discussed it with her staff so that they were aware of their roles in the wider context. She wanted people to know why they were coming

into work as the actual work in the category three lab was somewhat routine and dull (discussion at VLA Midlands).

CONCLUSION

This chapter has examined the AHWS and its daughter strategy, the Veterinary Surveillance Strategy. Evidence that Defra's approach to animal health policy has changed from that seen under MAFF has been found. In the case of the AHWS, the EIG is a good example of a new type of governance structure designed to facilitate key themes in the AHWS, such as partnership working, stakeholder participation and the idea that prevention is better than cure. The EIG has promoted these ideas through open meetings, active engagement with stakeholders and promotion of the idea of farm health plans.

Progress with these themes has been patchy, however. Part of the problem lay in the arriving at an understanding within the EIG on definitions of some concepts. The EIG has constructed meanings for words like stakeholder and partnership that enable work to go ahead, while at the same time, reflecting examples of current practice. In the case of welfare, what was particularly significant was the downgrading of the importance of the concept relative to health coupled with a reluctance to challenge existing industry practices. Though the EIG works in a very open way, some of its outputs can be seen as demonstrating that industry interests retain a strong position. The EIG has also struggled to promote farm health plans although work in this area is ongoing. Responsibility and cost sharing has been a particularly difficult issue for the

EIG which has had to try and combat the idea that it's just about passing on cost to the industry at a time of increasing financial constraints upon Defra. Although some industry bodies are sympathetic to the idea, particularly the pig industry (comments by Stewart Houston to the EIG), other sectors remain either unconvinced or hostile. In the light of the decision not to issue licences to farmers to cull badgers to try and control bTB, the NFU withdrew from talks on the responsibility and cost sharing agenda. Perhaps this is another example of 'foot stomping' (Interview Defra official 2 in the context of bTB policy) in the hope of gaining concessions. Progress has also been hampered by a complex and fragmented delivery landscape for animal health and welfare which requires reform to bring it under control (Eves 2006). The separation of bTB to another body, the establishment of a sub-group to focus on responsibility and cost sharing and the very recent announcement of a review of the future of the EIG must raise a doubt as to the future role, if any, of the EIG in providing that control.

In considering the working of the Veterinary Surveillance Strategy there is evidence that change was underway prior to Defra. However, post-2001 FMD the pace of reform has quickened and the work of the VLA's laboratories is now more focused on the delivery of Defra priorities rather than those of local private vets. This was observed in fieldwork to the two laboratories in the form of new working patterns and organisation of work, and in throughput of work in marked contrast to my time in the VLA. These observations were confirmed in interviews and casual conversations with VLA staff.

Chapter 6: Bovine Tuberculosis

Some animal health diseases arrive unexpectedly, like a bolt from the blue. BSE is perhaps the best known example of this. These diseases are new, of unknown aetiology, and the risks to both animal and human health are unknown. The role of science in these cases is to begin to understand the disease more, to get some idea of what causes it, how it spreads and what the impact is likely to be. Another set of diseases are those such as FMD. Here, the disease is well understood and its effects on both human and animal health are well known and understood. As would be expected, policy to deal with an outbreak is well established. However, even in this class of disease, as was demonstrated earlier, there is often an element of the unknown. In the case of FMD this arose as a consequence of the long time gap since the previous outbreak which had the consequence that many practicing veterinary surgeons had never seen a 'live' case in their clinical practice. As we saw with the 2001 outbreak the expertise of one set of scientists, veterinary surgeons, was overridden in the eyes of policy makers by the expertise of another set of scientists in the form of epidemiologists. Their modelling expertise came to be seen as the means to quickly get the outbreak under control. Instead of using epidemiology in conjunction with the local knowledge that vets had to contribute, the policy makers supplanted one form of science with another, arguably to the detriment of the attempt to deal with the outbreak.

Bovine tuberculosis (bTB) is not like either of the above two diseases. Like the poor, it appears that it will always be with us. The aetiology of bTB is well

known, although gaps in scientific knowledge exist. For example, it is not clear what role, if any, is played in the maintenance of the disease by wildlife reservoirs, in particular by badgers.

This chapter begins with a discussion of the science of TB. In particular, note will be made of the potential for error inherent in the method of testing employed. Then there is a brief history of policy employed to eradicate and contain bTB since the 1930s. Importantly, the disease was initially controlled to manageable levels by the use of measures focussing on cattle only. Thirdly, the debate that originated in the early 1970s around the role of badgers in infecting cattle with TB is discussed. This culminates in the recent public consultation on badger culling which provoked a record number of responses.

It will be shown that Defra appeared to be very keen to retain culling as a policy option despite difficulties arising from issues of practicality, public consent and lack of clear scientific evidence to support such a cull. Finally, the governance arrangements that have arisen from the ten year strategy are described and discussed, concluding that Defra has been obliged to revert to a more in-house and private style of policy making more characteristic of MAFF than the open and transparent approach seen in the case of the AHWS.

THE SCIENCE OF BOVINE TUBERCULOSIS

Bovine TB is a zoonotic infection of cattle caused by the bacterium Mycobacterium bovis. The bacterium that causes tuberculosis in humans, M.

tuberculosis is closely related to M. bovis, as is M. avium ssp. paratuberculosis which causes a wasting enteric disease in cattle, Johnes disease, and is implicated in the human condition Crohn's Disease.

M.bovis can infect all land mammals (Defra 2005b, p.1) although these hosts vary in their ability to pass on the infection. Badgers are an important wildlife reservoir of M.bovis, although their role in transmitting the disease to cattle is little understood and remains the cause of significant controversy. Deer also can become infected and transmit the disease within their own population and to other species.

M.bovis is a slow growing microaerophilic organism. This makes the lungs an important site of infection. The fact that it is so slow growing, taking six to eight weeks in optimised laboratory conditions to grow, makes routine bacterial culture useless as a diagnostic method. A further difficulty in culturing M.bovis is that infected animals do not excrete organisms in a steady flow. On some days animals may excrete huge numbers of bacteria (super excretors), while the same animal may, on other days, not excrete observable numbers of bacilli.

In addition to the lungs, bacilli may survive within T lymphocytes. The immune response to infection by M.bovis attempts elimination by phagocytocis, yet the survival of bacilli within cells makes the complete elimination of infection highly unlikely. Sites of infection are thus walled off by the body in tubercles. While such tubercles may remain latent for many

months or years, they may grow and spawn secondary tubercles throughout the body (Hancox 2000, p.88).

As bacterial culture is ineffective in diagnosing bovine TB, although used in confirming a diagnosis, diagnostic tests rely on the detection of an immune response. In the UK, a skin test (the Single Intradermal Comparative Cervical Tuberculin (SICCT)) is presently the definitive test in cattle. Inactivated proteins from M. bovis are inoculated in the skin of an animal's neck. A second site on the neck is inoculated with proteins from M. avium. This is because cattle may have become exposed to this cause of avian TB, and will produce an immune response to it, although M. avium does not go on to cause disease in cattle. Three days post inoculation, the sites are examined. A positive test, one which results in an animal being classed as a 'reactor', is one in which the reaction to the site of M. bovis inoculation is 5mm or more than the reaction to M. avium inoculation (Defra 2005b, p.4). In a herd test, these reactor animals are slaughtered and examined post mortem. Lesions typical or suggestive of TB are then cultured under laboratory conditions. Lesions are most likely to occur in the lungs or in the lymph nodes of the lung and throat. A reactor becomes a confirmed case of bTB when M.bovis is successfully isolated from these cultures. Should this occur then the herd from which the animal was removed is deemed to have experienced a 'breakdown.' Skin tests from that herd are then re-examined and any animal where the M.bovis reaction is 3mm or more than the M.avium site is now deemed also to be infected with M.bovis (Defra 2005b, p.4).

The SICCT has a drawback that is common to many tests which attempt to detect an immune response in an animal. The drawback is that such tests cannot be 100% accurate. There is a balance to be struck between specificity, the certainty that the organism that has provoked the immune reaction is indeed the one that is being tested for, and sensitivity, that is the likelihood that the test will pick up a positive. The greater the sensitivity the greater the chance that the test will pick up a reaction that is a false positive. The greater the specificity, the greater the chance that a positive animal will be missed and that it will give a false negative result. The sensitivity of the SICCT, that is the ability of the test to detect all positive animals, is believed by Defra to vary between 77% and 95% based on the results of a number of studies. Sensitivity between these parameters means that for every 100 infected animals tested, the test will fail to pick up between 5 and 23 cases depending on the sensitivity of the particular batch of tests being performed (Defra 2005b, p.4). Sensitivity of the test is thought to be very good, at least 99%. This means that of 100 uninfected animals tested only 1 will give a false positive reaction (Defra 2005b, p.4).

M. bovis used to be a significant cause of disease in humans. In the 1930s there were some 2,000 deaths annually from bovine TB (Hancox 2002, p.224). The consumption of raw milk was the usual source of infection, but as pasteurisation of milk became routine, the number of cases dropped. In 2001, only 40 cases of tuberculosis in humans were the result of infection with M. bovis. Doctors consider that most of these were contracted abroad or were the reactivation of lesions pre-dating milk pasteurisation (Defra 2005b, p.7). So

although bovine TB is a zoonotic disease, the risk of infection to humans today is very low. Those working in direct contact with infected animals are at the highest risk, while the risk to the general public is exceedingly small.

While the human impact of the disease has been reduced, the impact of bovine TB on the farming industry remains significant. In 2003, 6% of cattle herds suffered TB breakdown (Defra 2005a, p.20), mostly concentrated in the southwest and west of England, and the southwest of Wales (Reynolds 2006, p.119). New herd breakdowns are running at an average of 18% increase per annum (Defra 2005a, p.20). The economic cost to the taxpayer has risen from £38.2m in 1999/00 to £88.2m in 2003/04 (Defra 2005a, p.26). This figure is mostly made up of the costs of herd testing and compensation to farmers. However, £14.3m was spent on research into bTB including the costs of the Randomised Badger Culling Trial (RBCT). The remaining sums were spent on a variety of other bovine TB related expenditure. The cost of testing and compensation alone for 2003/04 was £67.6m. The 2001 FMD epidemic appears to have had an adverse affect upon bovine TB with areas of the country previously with a low incidence of bovine TB experiencing new breakdowns following restocking. In Cumbria, for example, the vast majority of new TB cases can be linked to restocked herds post 2001 FMD outbreak, or to bought in infected animals (Defra 2005a, p.23). It is worth noting that during the FMD epidemic, routine bovine TB testing was in abeyance.

HISTORY OF bTB CONTROL

As noted above, in the 1930s human infections of tuberculosis from cattle were commonplace. While we take for granted today the existence of a wide range of anti-microbial agents, in the 1930s antibiotics were not available. TB was thus a major human health problem. However, the human health risks from consumption of infected milk were recognised long before the 1930s. The Royal Commission on Tuberculosis (1907) established the common identity of the disease in both man and cattle (Macrae 1961, p.81). However, control measures were only introduced from 1913 onwards and only then to deal with cases of clinically diagnosed infection. Testing of cattle for bTB was introduced in 1935, initially on a voluntary basis in order to obtain attested status for a herd. This was introduced under the Milk Act 1934, the aim of which was to improve the quality of the milk sent for human consumption. A farmer who managed to obtain attested status for his herd would be paid a bonus of one penny per gallon of milk sold through the Milk Marketing Board. The basis of the scheme was, in essence, the same as it is today. Cattle were tested at regular intervals and the farmer was obliged to remove any reactors from his herd or lose his attested status.

Take up of the Attested Herd Scheme was slow, such that by the end of 1936 there were only 414 attested herds in the country. In addition, during 1936, 23,716 cattle were slaughtered as a consequence of a diagnosis of tuberculosis (Macrae 1961). The Agriculture Act 1937 empowered the Minister to take action to eradicate TB and other animal diseases. Changes were made to the

benefits to farmers in having an attested herd and by the end of 1938 the number of such herds had increased to 5,353.

Eradication of the disease as a policy goal was decided upon in 1950 (the Defra website says that testing and slaughter became compulsory in 1950, but that does not tell the whole story) (Defra 2007) with measures being taken under the 1937 Act to declare an area an eradication area. When such an area was declared then herds that were not attested were placed under movement restriction. In addition, such non-attested herds were now tested marking the point at which compulsory rather than voluntary testing was introduced into Britain. However, this was not as draconian as it might first appear. Notice had to be given to declare an area an eradication area. During the notice period which in practice amounted to two years (Macrae 1961), testing of non-attested herds would be paid for by the state setting the precedent for such tests to be paid for from the public purse. All farmers had to do to qualify for free testing was to dispose of the reactor carcases in accordance with Ministry guidelines. Reactors to the test were compulsorily slaughtered with compensation being paid to the farmer. Within the eradication area once all herds had been tested on two occasions and the reactors slaughtered, then the whole area would be declared an attested area. The intention was to declare new eradication areas each year until the point was reached that the whole country was one complete attested area. This goal was finally achieved in October 1960.

It is important to note that by ‘eradication’, it is not meant that the disease was wholly eradicated in the sense that smallpox was eradicated in humans, but

that the disease is reduced to such low incidence as to be insignificant. The policy of declaring eradication areas until the whole country was an attested area was successful and, combined with annual testing of all herds (which still occurs for some other diseases such as Brucellosis), incidence of bTB was reduced to a low point of 89 affected herds in the country, mostly in the southwest of England by 1979 (Hancox 2002, p.223). However, even in 1961 Macrae was claiming that 'Bovine tuberculosis is now at least under satisfactory control in Great Britain' (Macrae 1961). The cost was estimated at around £130m, the bulk of it going on bonus payments and compensation to farmers for loss of reactor animals.

Other demands on the animal health budget, in particular BSE, led to annual testing being abandoned in 1992/3 and replaced with a system where herds were tested every 1, 2, 3 or 4 years calculated by the SVS (now Animal Health) on the basis of parish incidence of bovine TB. Hancox argues that this relaxation of the testing regime is responsible for the increase in bTB cases observed over the last fifteen years or so (Hancox 2002, p.223).

The programme of testing of cattle and slaughtering of reactor animals does, however, remain at the heart of Defra's strategy to deal with bTB, although now Defra says that this is a strategy to 'stop its spread' rather than use the language of eradication (Defra 2007). There have been some modifications to the testing regime other than the introduction of longer testing intervals. In November 2004 a range of relatively minor amendments was made with the aim of improving detection and reducing the spread of the disease. The main

measure was the adoption of a zero tolerance approach towards late TB tests. If a farm becomes overdue for a test, movement restrictions come into force immediately rather than, as previously, a grace period of three months being allowed.

In December 2005 pre-movement testing of cattle was announced. However, after a vigorous campaign of opposition by the NFU and livestock auctioneers, the effective date for full implementation of this policy was delayed until 1 March 2007. The issue of pre-movement testing and opposition to cattle controls is discussed in more detail below.

BOVINE TUBERCULOSIS AND BADGERS (meles meles)

Despite the considerable success in reducing bTB to manageable levels, infection has always persisted. As noted above, some areas have been identified as 'hotspots' of infection. The reason why infections might persist in such areas has been long debated. As long ago as 1961, Macrae identified a number of possible reasons including problems of disinfection on some farms, the failure rate of the test to detect infected animals, the possibility of infection from humans and domestic animals (thought unlikely) and, finally, the possibility of a reservoir of infection in other species. Macrae considered goats and pigs and suggests that farmers who keep such a mixture of animals on their farm may be required to keep these animals apart from their cattle. Macrae, a MAFF vet, did not consider the possibility of wildlife acting as a reservoir of infection, and badgers were not mentioned by him at all (Macrae 1961).

Badgers have come under suspicion since the early 1970s as a possible wildlife reservoir of infection since an infected badger was found on a TB affected farm in Gloucestershire. Since then, badgers have been regarded by MAFF and Defra as a significant cause of infection. Experiments where badgers and cattle were housed together seemed to suggest that badgers could pass the disease to cattle although the mode of transmission was not demonstrated nor, seemingly, was the likelihood that badgers and cattle would in practice be housed together long enough for transmission to occur considered.

In its summary of current scientific knowledge relating to bovine tuberculosis (Defra 2005b) published along with the Strategic Framework for the Sustainable control of bovine tuberculosis (bTB) in Great Britain (Defra 2005a), Defra provided a summary of current scientific knowledge on the issue of badgers and bovine tuberculosis.

Infection of badgers with TB is thought to be by inhalation (the aerosol route) and, as badgers are territorial animals as a consequence of receiving a bite from an already infected badger. Female badgers may also infect their cubs although not via the placenta or through infected milk (Defra 2005b, p.12). Badgers come into contact with cattle in their search for food, especially earthworms which are found more numerously in pasture and which are easier to find for the badgers because of the short grass.

History of badger controls

Following on from this work the Badger Act 1973 was passed giving the minister power to issue licences to kill badgers in the interests of preventing the spread of disease (Defra 2005d). Farmers granted licences to kill badgers on their own land under the provision of the 1973 Act did so primarily by shooting or by trapping (Wilkinson 2007, p.5).

However, these practices gave rise to concerns over the welfare of the badgers and to concerns about the lack of controls over those licensed to kill badgers. Responding to these concerns, MAFF determined that only its own staff or those people under its control would henceforth be licensed to kill the animals. Welfare was addressed by specifying the method of killing. Shooting or trapping were no longer to be permitted but badgers were to be killed by gassing. The killing of badgers by this method was permitted, with no irony intended, under the Conservation of Wild Creatures and Wild Plants Act 1975.

Gassing badgers was carried out using cyanide gas, killing the badgers in their setts. These operations were carried out in 166 areas across the South West of England. The average area for each cull was 7km^2 (Wilesmith 1986 quoted in ISG 2007, p.28). Within this programme of gassing badgers an area around Thornbury in Gloucestershire was repeatedly cleared of badgers between 1975 and 1982 resulting in the effective elimination of badgers from the area. In the following ten years there were no confirmed herd breakdowns in cattle within that area (Clifton-Hadley et al 1995 quoted in ISG 2007, p.28).

As was the case with trapping and shooting, the gassing of badgers also provoked concerns on the grounds of animal welfare. These concerns led to the first of several reviews of bTB policy in respect of badgers, the Zuckerman Review which was published in 1980. While Zuckerman was carrying out his review, gassing was halted. His review came to the conclusion that badgers were a wildlife reservoir of M.bovis and that badgers could spread the disease to cattle. Cattle infections had increased during the period of the review and so Zuckerman recommended that gassing should recommence as a control measure. However, he also sought to address the concerns of those who saw gassing as inhumane by recommending experimental research into how badgers died in the setts when gassed; were these deaths quick and humane? Following these experiments the Minister took the decision that gassing was not a humane method of killing and ruled that it should no longer be used. Instead he permitted killing by trapping the badgers in cages and then shooting them.

Zuckerman had recommended that in order to tackle the problem of badgers infecting cattle, a 'clean ring' strategy was required. Once a herd had experienced bTB and had the disease confirmed by the presence of visible TB lesions in the carcase and/or a successful laboratory culture of M.bovis from tissues taken from the slaughtered reactor animal, a case for considering a cull of badgers around the farm could be made. The 'clean ring' strategy was based upon sampling badgers from social groups around the infected farm following a detailed mapping of badger population in the area. As no rapid test for M.bovis in the badger existed, sampled badgers would be trapped, killed and

then examined post mortem. Cultures from the carcases were taken. Where a positive badger was found the whole social group of animals would be culled. Then a second round of sample testing would be carried out on badger setts contiguous to the now culled sett. This process continued until an area was declared to have badgers that were uninfected, or at least found to be uninfected by this method. Within the cleared area monitoring, trapping and killing of badgers continued for a period of six months in order to keep the area free, 'clean', of infected badgers. This policy relied upon the assumption that infection of badgers occurred within pockets of infected social groups (ISG 2007, p.28). In the South West of England cases of bTB in cattle believed to have originated from badgers were treated in accordance with this clean ring policy. The policy recommended by Zuckerman was expensive and time consuming. Zuckerman had further recommended another review of policy in three years' time. That review, conducted by Professor Dunnett, reported in 1986.

Dunnett did not come to the same conclusions as Zuckerman. Dunnett noted the drop in the number of cases of TB that had occurred in the South West in the period immediately following the commencement of gassing. However, although this was considered by some to have been a consequence of the gassing operations, Dunnett found that bTB incidence had dropped across the country including in Northern Ireland where no gassing or culling of badgers had taken place at all. Dunnett concluded that insufficient evidence existed to support the assertion that gassing had caused the reduction in cases in the South West. Furthermore, doubts were cast on the underlying principle behind

Zuckerman's clean ring strategy, the idea that infected badgers were to be found in pockets around a farm that had experienced a breakdown. The costs of this policy were also considered high given the doubts surrounding both its basis and its efficacy. The high costs associated with the clean ring policy were not thought to be justified.

In the light of these doubts and concerned about the lack of information available to demonstrate the benefits of culling badgers, Dunnett proposed an interim strategy. This strategy relied upon farmers taking responsibility for the disease in part upon themselves by taking measures to keep cattle and badgers separate. Such measures would today be classed as biosecurity. Dunnett's report was the first time that farmers were expected to take some action for themselves in their own defence from the disease rather than as had previously been the case, MAFF carrying out the policy and subsequently compensating farmers for their losses as a consequence of the policy. Culls of badgers would only be permitted where an outbreak might reasonably be supposed to have been acquired from badgers. In addition, a cull would not be widespread as could potentially be the case under the clean ring policy, but would be restricted to the farmer's own land that was occupied by the affected herd.

It should not be forgotten that by 1979 the annual herd incidence of bTB had reached a record low point both nationally and in the troubled hotspot of the South West and so one might reasonably ask why there was a continued focus upon the badger as a cause of infection in cattle when incidence of the disease was at a low point. However, from the 1980s onwards, rates of infection in

cattle began to rise and the disease again posed a serious problem for both farmers and policy makers. The policy response was to order a new review, this time under the chairmanship of John Krebs. While this group worked on the problem badger culling in line with the interim strategy were suspended. The scope of the Krebs Review was more wide ranging than the Zuckerman and Dunnett reviews. The Group was larger also than either of the two previous reviews. In respect of the role played by badgers in the transmission of bTB to cattle the group concluded that badgers played a role as a source of infection but that it was, with the present state of knowledge, unable to give a firm recommendation on killing badgers as there had not been any proper experiments carried out. Furthermore, the review noted that the link between badgers and cattle TB was one that depended upon correlations rather than one that had been demonstrated as a clear one of cause and effect. The Krebs review was thus not in a position to give a clear steer to policy in respect of badger culling. Krebs also noted that existing MAFF guidelines on keeping badgers and cattle apart, as recommended by the earlier Dunnett Review, were not widely adhered to by farmers.

This inability on the part of the Krebs group to make clear recommendations was the subject of questioning by the House of Commons Agriculture Committee. Peter Luff, the committee chair referring to the 'sense of disappointment that some farmers have expressed to me certainly that you laboured mightily for 18 months or two years and just concluded that there was not enough evidence to conclude anything' (House of Commons 1999, p.1). Krebs responded by saying that where there was uncertainty scientists should

acknowledge that this was the case and not seek to provide answers. Under further questioning from Austin Mitchell, Krebs elaborated on the nature of the uncertainty. Firstly, 'There may be a link [between badgers and cattle TB] but it may only be five or ten per cent of the problem, or it may be 90 per cent of the problem' and secondly if there is a significant contribution 'we still do not know whether culling badgers is an effective way of reducing or eliminating the problem' (House of Commons, p.2).

The most significant recommendation of the Krebs report was that MAFF set up an experiment to quantify the impact of culling badgers as a control measure. This experiment should be set up and monitored by a new independent group of experts. Importantly, Krebs said that this would enable MAFF to carry out a cost-benefit analysis of killing badgers to control bTB in cattle. The experiment would be carried out in TB hotspots. In the rest of the country Krebs recommended that no badger culling should take place, considering the benefits of a cull outside of the hotspot areas to be low. The expert group recommended by Krebs was set up in 1998 as the Independent Scientific Group on Cattle TB (ISG) and was charged with carrying out the experiment recommended by Krebs. The experiment was known as the Randomised Badger Culling Trial (RBCT) or the 'Krebs Trial.'

Before the Krebs Trial could begin the ISG had a number of practical problems to overcome. Principal among these problems was deciding upon the method of culling to be employed. There was a need to strike a balance between the efficient culling of badgers and concerns for the welfare of the animals. In this,

the ISG was faced with the same difficulty that had faced previous policy makers on culling. Krebs had suggested that traps could be used but did not rule out the use of snares. The ISG took the view that traps only would be used as the use of snares may result in public objections to the trial and perhaps also to protests. On similar grounds, gassing, which had been discontinued in 1982 on the grounds that it was considered to be inhumane was also ruled out. But there was another reason for not using gas; with gassing the badgers die underground in their setts. This meant that the badger carcases would not be available to the scientists for examination. In addition, it was clear that Ministers would not countenance the widespread elimination of badgers from large swathes of the countryside.

A second problem for the ISG was that Krebs had recommended that any culling protocol should include culling lactating sows. The ISG took the view that this would once again present problems of acceptability to the public. Consequently, the ISG decided that there should be a closed season for culling running from February to April each year when no culling would take place. This avoided the possibility that lactating sows would be trapped and subsequently killed leaving their cubs to starve to death in the sett below ground.

The RBCT was designed to answer two important questions. Firstly, what proportion of bTB outbreaks in cattle are caused by badgers? Secondly, to determine whether culling badgers would be an effective and cost-effective way of controlling bTB in cattle and, if so, in what circumstances? In line with

the recommendations in Krebs, the ISG determined that the trial would take place in the bTB hotspots of West and South West England and would consist of dividing 30 areas, each approximately 100km^2 into three. These were known as triplets. Within each triplet area one of the triplets was assigned one of three culling protocols. One was a survey area only where no culling took place but badger activity was surveyed within the area. One of the triplets was subject to reactive culling of badgers on and around a farm following a bTB outbreak, but no general cull or clean ruing strategy was pursued. The final of the three areas in the triplet was subjected to proactive culling where as many badgers as possible within the area were caught and culled and badger populations in the area kept as low as possible.

The trial began in December 1998 and was designed to run until 2006. The trial was temporarily suspended between February and December 2001 as a consequence of the outbreak of foot and mouth disease. As the 2002 closed season was to begin soon after the trial could resume, it was decided to restart culling in May 2002. In their final report (ISG 2007) the ISG note that although there was a loss of nearly a year's trapping, in the areas within each triplet that were subjected to proactive culling, 70% of these areas had been culled and so data from those areas was being collected on the effects of badger removal during that time. The ISG are confident that the hiatus caused by the FMD outbreak does not bring into question the validity of their final findings from the trial. Indeed they consider that the FMD outbreak actually led to some interesting and valuable insights into the dynamics of M.bovis infection in both cattle and badgers (ISG 2007, p.55).

Interim findings from the RBCT were published in Nature. It was found that in the reactive areas where culling had taken place only after an outbreak, culling actually led to an increase in bTB incidence of 27% over the survey only areas (Donnelly et al 2003, p.835). This finding was consistent across the areas that had been subject to the triplet protocol by that time. This finding led the ISG to recommend to Defra ministers that culling in the reactive areas should be brought to an end at the end of the 2003 culling season 'on the grounds that it was not a viable base for a future policy option' (Defra 2003 bTB web page). In the case of the proactive areas, incidence of herd outbreaks of bTB were found to be 19% lower than in the survey only areas but that incidence of bTB in areas up to 2km outside the proactively culled area were 29% higher than in the area adjoining the survey only areas. (Donnelly et al 2005, p.843).

The effect, observed in the interim findings for both the reactive and proactive culling protocols, of bTB going up in the areas adjacent to the area where culling had taken place is known as the perturbation effect. Culling never completely eradicated all the badgers from an area. It is thought that those that survive roam widely. Observational data suggests that when this occurs, the incidence of TB in the badgers rises in the following year (Roper and Lupps 1993 in Defra 2005b, p.17). This perturbation effect would come to have a decisive role in the ISG's final report in recommending that culling is not a cost-effective control strategy for bovine TB.

Britain was not the only country to be carrying out experiments to determine the efficacy of culling for the control of TB. In particular, the Irish 'Four-Areas

Badger Trial' received considerable attention in the UK as it appeared to demonstrate that culling could significantly reduce the incidence of bTB in cattle by a dramatic 60 - 69% (BBC 2005). However, the Four Areas Trial has been strongly criticised both on the grounds of animal welfare; initially, badgers were strangled using wire snares, and on scientific grounds (e.g. Godfray et al 2005). In particular, the failure of the trial to use control areas where there was no culling of badgers has been criticised. Although the trial did have 'reference' areas, culling of some badgers in these areas was also permitted to be culled. The perturbation effect noted in the interim findings of the RBCT did not feature in the reporting of the results of the Four Area Trial. Indeed, these reports 'ignore published evidence on the perturbation effect … produced by culling programmes' (Wilsmore and Taylor 2005, p.35). Finally, despite having pursued a culling strategy that has resulted in a reduction in the Irish badger population by two thirds, bTB did not appear to be under control in Ireland, and 'there is no discernable improvement in bovine TB vis a vis other countries' (Badger Trust 2005, p.7).

The response of the British Government to the interim findings of the RBCT was threefold. In December 2005 it announced that pre-movement testing, that is, a farmer wishing to sell one of his animals to another farmer would have to first have the animal tested for bTB within 60 days prior to it being moved unless it is subject to an exemption. The test was to be paid for by the farmer unless the routine TB test paid for by the Government had taken place within the 60 day period. The aim of this measure was to reduce the spread of bTB from farm to farm via bought in cattle. Many vets regarded the measure as

sensible. In one interview, a practice vet said ‘It should have happened ages ago.’ The same vet, who practices in Cumbria traditionally an area free of bTB save for the South West tip of the county near Barrow in Furness, advised all of his clients to have a pre-movement test prior to restocking after the 2001 FMD outbreak where Cumbria was one of the hardest hit counties. However, ‘The uptake was zero, or damn near it anyway. They [farmers] would have done it if it had been free, if the government had paid for it, but damned if they’re going to do it themselves which was incredibly short sighted of both parties, government and farmers.’ The consequence of farmers’ failure to have bought in cattle tested was that bTB is now on the increase in Cumbria and is ‘purely imported since 2002’ (Interview practice vet 2).

The second measure that Defra introduced was to revise the sums payable to farmers in compensation for slaughtered reactor animals. The existing scheme had produced overpayments with some farmers actually making a financial gain from having an outbreak. Interview respondent, Defra official 2, said

> ‘We’ve got evidence of farmers who have been getting half a million pounds a year in compensation. This is hundreds of animals, bad TB outbreaks, you wouldn’t want to be in that position, but it’s been quite an income stream.’

Furthermore, the new system was supposed to more accurately reflect the value of the animals. The old system was thought to overvalue animals sometimes by 50 to 100% overvaluation of pedigree animals over their market valuation. Under the new arrangement there are 47 categories of compensation payment based upon the type of animal that is diseased. The valuations in the

table are based on averages and so some will gain over individual valuations while others will do less well. If the cow falls in a particular category the farmer is paid the tabular sum for it. It does not get valued individually. However, even the new arrangements for compensation can be argued to be a subsidy from the government to the farming industry. Defra official 2, for example, said,

> 'Last month [June 2006] we still paid out ten times the amount in compensation that we got back in salvage value from the animals. So you could argue that we're paying ten times more than they're worth. Although clearly for some animals it will be less than their replacement value and we accept that, but once they're diseased they are not worth their replacement value.'

It might be thought that the new system is one manifestation of the bTB Strategy's focus upon cost sharing, as might the requirement for farmers to pay for pre-movement testing. However, as will be shown, in the case of bTB farmers appear to be reluctant or opposed to cost sharing. Often this reluctance is expressed in terms of a trade off between government action to cull badgers and farmers acceptance of a greater cost burden to deal with the disease. More militant farmers even go so far as to advocate non co-operation with the TB testing regime until government accedes to their demands for action on badgers. The pressure group Farmers for Action, one of the leading groups behind the 2000 fuel protests, has renewed that call in the light of the publication of the ISG's final report on the RBCT. 'FFA added that it was calling on all livestock farmers to be non-compliant with Defra in respect of TB testing until the government showed it was "prepared to grasp the nettle and deal with unhealthy wildlife"' (Farmers Weekly 19 June 2007).

Public consultation on badger culling

The third response to the ISG's Interim Report was to announce a public consultation on badger culling. The consultation covered both the principle of badger culling and also the method(s) that could / ought to be used to carry out such a cull. The consultation document made a number of strongly worded statements that suggested that Defra was keen to retain culling as a policy option.

> 'International experience indicates that it is not possible to contain and eradicate bovine TB if its background presence in wildlife is left unaddressed' (Defra 2005e, p.5).

> 'The scientific evidence shows that intensive culling of badgers over large areas can be effective in helping to prevent the spread of bovine TB in cattle and vets advise that without badger culling satisfactory control and reduction of the disease in cattle is unlikely to be achieved' (p.5).

> 'The Government recognises that cattle-to-cattle and badger-to-cattle transmission are both contributors to the high incidence of bovine TB in cattle' (p.20).

> 'For bovine TB controls to be effective veterinary advice is that measures to reduce the risk of transmission from badgers to cattle should include both culling of badgers and cattle' (p.27).

> 'Both the scientific evidence and veterinary advice suggest the need for a balanced approach (my emphasis) that tackles the reservoir of infection in badgers as well as in cattle to achieve a sustained reduction in TB in cattle in high incidence areas in England' (p.29).

Having presented the 'evidence' the document went on to ask 'In the light of the evidence presented as part of this consultation, on balance, do you think a

policy to cull badgers should be part of the approach to help control the disease in cattle in high incidence areas?' (Defra 2005e, p.29).

Opinion on three culling options was sought: individual licensing, a general cull over large areas, and a targeted cull linked to herd incidence of bTB. The first option relied upon the powers already granted under that Protection of Badgers Act 1992 for the Minister to grant an individual licence to a farmer for the purposes of preventing the spread of bTB. However, the consultation document was cool on the possible benefits of this option noting the danger of the perturbation effect but also noting that more effective means of culling may be available or, finally, that it may be decided that culling may not have a benefit for bTB prevention. The second option of a general cull would depend upon loosely defined geographical boundaries, specific areas or by county. The document sought responses suggesting appropriate geographical areas for such a general cull. The third option of a targeted cull required suitable criteria for determining an appropriate disease history for an area to qualify for a targeted cull.

For their part, the ISG was not happy with the consultation document. In its response to the consultation it argued that in the consultation document 'The scientific basis for any badger culling is neither accurately portrayed nor carefully explored in the consultation document. The emphasis overall focuses on possible, mostly hypothetical, weaknesses of the RBCT, with no balancing comments on its methodological strengths and the robustness of the analytical findings it has delivered, nor on the broad acceptance of the findings by the

scientific community' (ISG 2006, p.1). The ISG also argued that both individual licensing and a targeted cull 'will increase rather than decrease cattle TB incidence' (ISG 2006, p.4). A general cull over 100km^2, one of the options for defining the geographical area for such a cull in the consultation document 'suggest virtually no benefit overall [for TB reduction]' (ISG 2006, p.4). One reason why the ISG may not have been happy with the consultation document could be that they played no role in developing it. This revelation was met with surprise by members of the Environment, Food and Rural Affairs Select Committee.

The consultation generated a huge response rate with 47,472 responses by letter and e-mail together with 13 petitions against a cull bearing 12,100 signatures and 10,000 text messages (Defra 2006a, p.4). Of those responses 68% of them came from campaigns run by farming and wildlife groups. Geographically, the majority of responses came from the South East and South West of England. Looking just at the raw numbers, 95.6% of responses were opposed to a cull with 4% in favour and 0.4% were neutral responses (Defra 2006a, p.5). Certainly it is the case that campaign groups took the opportunity to put their case, with the Badger Trust and the RSPCA taking out advertisements in the national press, but even so, such a huge response to a consultation document was unprecedented, and surprised even civil servants at Defra (Interview Defra official 2).

The accountancy firm PKF was asked by Defra to carry out an analysis of the responses (Defra 2006a). PKF subdivided the responses as 'stakeholder' (225

responses, 0.01% of the total), 'campaign' (33,129, 68% of the total), 'substantive public', that is lengthy responses from the public (348 responses, 0.01% of the total, and 'other public responses' (13,770 responses, 29% of the total). On the first question, on the principle of a cull, stakeholders divided 41% for a cull, 50% against with 9% not stated. Substantive public divided 51% for a cull, 44% opposed with 5% not stated. Other public responses divided 6% in favour of a cull, with 93% opposed and 1% not stated. Campaign responses were 2% in favour and 98% opposed. Unsurprisingly, there were no campaign responses where a preference was not stated. Taking away the campaign responses, the division of the remainder was 8% for a cull with 91% against and 1% not stated. (Defra 2006a, p.11). The region most in favour of a cull was not the South West, but the West Midlands but even here only 10% of responses favoured the principle of a cull (Defra 2006a, p.12).

Given the huge number of responses generated by campaign groups, it is interesting to set aside these for a while and look at the responses originating from stakeholders. PKF did this and noted several arguments and points made by stakeholders both for and against the principle of a cull. Stakeholders divided 41% in favour to 50% opposed. The arguments employed by those in favour included the need to tackle bovine TB in both the cattle and badger populations. One unnamed stakeholder quoted in the report feared that 'Without culling, the combined weight of increased cattle controls and an uncontrolled wildlife reservoir of bovine TB could potentially destroy the very industries which government policies are trying to protect' (Defra 2006a, p.14-15). This group of stakeholders also argued that should farmers be required to

carry out a cull then their identity should be kept secret and should not be able to be made known using the Freedom of Information Act. In addition, there was criticism of the regime of pre-movement testing with some questioning its efficacy, some arguing that Government should fund all pre-movement tests and some arguing that farmers might only be willing to co-operate with testing if action were also taken to tackle the reservoir of infection in wildlife. Finally, some argued that as badger numbers had increased in recent years they were no longer endangered and the logic of granting them legal protection no longer applied.

Among those stakeholders who were opposed to a cull a number of arguments were advanced. 37% of total stakeholder responses argued that controlling the spread of bTB required improved measures to control cattle to cattle transmission and improved biosecurity. Before commencing any cull of badgers, an assessment was required of the effectiveness of these cattle based measures (Defra 2006a, p.12). Within this class of objection were arguments that suggested that if pre-movement testing were to be introduced at the same time as a cull then it would not be possible to assess the effectiveness of either the cull or the pre-movement testing regime. Defra's Scientific Advisory Council argued that large scale culling is 'unlikely to be an effective control measure until further control methods to reduce bovine TB have been implemented' (Defra 2006a, p.13). In addition, other stakeholders noted that improved testing in Northern Ireland had reduced breakdowns by 40% since November 2004, and that cattle movements were the main factor in predicting bTB outbreaks. Finally, some argued that the test used to detect TB in cattle

was not as effective as the gamma interferon test and that testing using this method should be more widespread.

Another group of stakeholders comprising 35% of the total stakeholder respondents considered that the present scientific evidence was inconclusive on the effectiveness of a cull. Points made in this group of responses included the argument that the RBCT should be completed and analysed before any decision could be taken, that as the ISG had stated that the consultation document was inaccurate in important aspects it was not appropriate to cull on the basis of a flawed consultation. 32% of stakeholder responses also noted the dangers posed by the perturbation effect that results from culling badgers, and quoted from the interim results of the RBCT.

Given what appeared to be an overwhelming opposition to the culling plan, and certainly a response that would have delighted any local government officer both for the size of the response and the clarity of the position adopted by the respondents, it might be thought that Defra would have been happy to rely upon it as evidence of the unacceptability of culling to the wider public. However, the general consultation was not the only element in the consultation exercise. In addition to the open consultation there were three 'Citizens' Panels' that took place in York, an area with low incidence of bTB, Brighton an area with medium incidence of bTB and Cheltenham an area of high bTB incidence. This element of the consultation exercise was conducted by Opinion Leader Research and its findings were published at the same time as the general consultation (Defra 2006b).

Participants were recruited to reflect the area in terms of age, gender, socio-economic group etc and met in their locations for a two hour 'scoping workshop' where the issues were introduced and participants' initial views gauged and then all participants took part in a one day workshop in London where participants engaged in various activities including small group discussions and exposure to panels of experts (Defra 2006b, p.10). The Citizens' Panels were intended to be representative of the 'general public' and so Opinion Leader Research excluded anyone who was involved in farming or who was a member of any organisation such as the Badger Trust that might indicate that their opinion was fixed on the issues.

The results of this exercise are interesting. Participants accepted as 'key facts' the following:

> 'Badgers are a host for bovine TB and they pass it on to cattle
>
> The problem is severe and likely to get worse
>
> A decision to cull will involve extensive action – 'half hearted' implementation is unlikely to work or may worsen the situation due to perturbation effect
>
> The science is inconclusive' (Defra 2006b,p .6)

Following the workshops, participants were evenly split between those who would support a cull and those opposed. A general cull was considered the

most likely to be effective, although 'they also believe that the science will never deliver a clear cut answer' (Defra 2006b, p.7). However, even among those supporting a cull, there was concern that this could only be done if centrally co-ordinated and part of a wider package of measures to deal with the disease (Defra 2006b, p.8).

Defra was very interested in the results of the Citizens' Panels:

> 'But it was really important to take people away who didn't necessarily have strong views on this and some who did, who hadn't really thought about it, take them through the argument and see how they came out. And you know, fifty fifty was interesting' (Interview Defra official 2).

The Minister, Ben Bradshaw was also interested in this element of the consultation:

> 'But what I thought was very interesting about the consultation we did on it was that the workshops that were set up, the focus groups that we set up involving people who didn't really know anything about the subject before, subjecting them to detailed information about it. By the end of their sessions they wee less reluctant to see badger culling than they had been in the beginning' (Interview Ben Bradshaw).

At lower levels of Defra too, there was some enthusiasm to retain culling as a policy option with discussion at one conference of the VLA on how to make culling acceptable to the public (Interview VLA 2).

Ministers remain committed to evidence based policy making and insist that a decision on culling would be based on the scientific evidence. Scientific

evidence landed on ministers desks in June 2007 when the ISG published its final report on the RBCT. As was shown in the discussion on the consultation, the general opinion was that the science was inconclusive. The ISG's final report was not. It came out firmly against a cull of badgers. 'On the basis of our careful review of all currently available evidence, we conclude that badger culling is unlikely to contribute positively, or cost effectively, to the control of cattle TB in Britain (ISG 2007, p.23). Reactive culling was found to have an overall detrimental effect, while proactive culling produced very modest improvements over several years of intensive culling by professional staff and even then at the cost of increasing incidence of bTB in the adjoining areas. 'The reasons for the limited capacity of badger culling…to substantially reduce overall TB incidence in cattle stem from the behavioural and ecological responses of badgers to culling, leading to strongly non-linear relationships between badger density and M.bovis transmission' (ISG 2007, p.172).

Ministers thus had in front of them evidence that, in the raw, there was significant public opposition to badger culling, opposition that could only be reduced to 50% even when led through the arguments in an intensive citizens' panel. In addition, Defra's own commissioned research by the ISG had finally come out strongly against a cull. Yet even now, Ministers did not rule out a cull as a policy option. David Miliband, then Secretary of State, in his statement on the publication of the ISG's report stated in a press release that 'We will be considering the issues it raises very carefully and will continue to work with the industry, government advisers and scientific experts in reaching a final policy decision on this serious issue.'

Further evidence of a continuing desire to see culling remain a policy option was provided soon after Gordon Brown became Prime Minister. All of Defra's ministers were moved from the department with one exception, that of Jeff, now Lord Rooker, who before his elevation to the peerage was the MP for the Birmingham constituency of Perry Barr, a constituency not noted for bTB containing as it does inner city Handsworth. Speaking before Brown's reshuffle, but after the publication of the ISG's final report, Rooker said at the Derbyshire Show that he was still 'open minded' about a cull. In addition, he was very critical of the ISG, accusing it of going beyond its remit and 'deviating off into practical and financial issues, which was not really what they were asked to deal with.' Finally, Rooker claimed that the report did not rule out culling but that it would need to be over a wider area and would not solve all of the problems. However, 'that doesn't mean to say it should not be part of the armoury' (Rooker quotes from Farmers Guardian 29.06.07). In Brown's reshuffle Rooker was given responsibility for animal health. 'The move is likely to be welcomed by the farming industry as the outspoken Lord Rooker has previously indicated strongly in private and in public that he supports calls for a badger cull' (*Farmers' Guardian* 09.07.07).

Finally, Defra asked the government's Chief Scientific Adviser, Sir David King, to review the evidence. His report, (King 2007), prepared in little more than six weeks, drew the opposite conclusion from that of the ISG. Unlike the ISG, King did not consider the cost effectiveness of any measure but contented himself with examination of the science only. On that basis he concluded that removal of badgers 'could make a significant contribution to the control of

cattle TB' (King 2007, para. 51). This intervention did not help to secure agreement on the ISG's recommendations but was seized upon by the NFU who stepped up demands for a cull.

STAKEHOLDER ENGAGEMENT

As Chapter four showed, the new policies on animal health placed considerable weight to stakeholder participation. This section reviews the history of Defra's attempts to engage with stakeholders and argues that in the case of bTB, these attempts have met with very little success. As a consequence it is argued that governance of bTB has largely abandoned wide stakeholder participation and instead resorted to arrangements favouring expert advice.

Before the publication of the 2005 strategy a TB Forum was established. This was a broad based stakeholder forum including vets, farmers, animal welfare and wildlife groups. Meeting three times a year the forum was attended by members who represented their organisations. This appears to have been a largely unsuccessful body. Interview data suggests that the meetings were characterised by conflict rather than by a desire to assist in moving policy forward.

> 'The TB Forum was basically a group of organisations who didn't agree on very much and therefore the meetings were virtually continual restatement of existing positions, plus various demands from government… Inevitably some business was done but

> it was pretty sterile by the end' (Interview Defra official 2).

Disputes were common, inevitably over the thorny issue of badger culling as a method of disease control. Radically different, and mutually exclusive positions, came to be repeated meeting after meeting leading to the 'Generally held belief that the TB Forum hadn't worked' (Interview Defra official 2). The response to the perceived failure of the TB Forum was to set up a different stakeholder group, the Core Stakeholder Group appointed on a different basis to the Forum. Rather than appointment as representatives of particular interests, members would be appointed on their individual merits. In approach there are similarities with the EIG set up to oversee the Animal Health and Welfare Strategy particularly in the idea of appointment as individuals not as representatives. The Core Stakeholder Group was heavily involved in the development of the 2005 Strategy and was deemed to be more successful than the TB Forum being 'quite a useful sounding board' (Interview Defra official 2).

However, even on the Core Stakeholder Group, things did not progress as smoothly as might be hoped for. Relations between stakeholders got difficult in respect of two issues: the interim results of the RBCT and on pre-movement testing. A long quote from an interview with a Defra official gives a flavour of relations in respect of the RBCT interim report.

> Things got very difficult when the interim conclusions of the RBCT came out, when we knew what they were. And we had to rethink a bit where they were going. That did become quite difficult. And there were

> accusations that we were foot dragging, why weren't we talking to stakeholders? To some extent because ministers told us not to. Why weren't we making enough progress on setting up a new stakeholder body? Well, it's a bit difficult to have a stakeholder body until you know what your policy is. And our argument was that particularly on badger culling this group needed to know what it was getting into, and effectively ministers had to reach this decision, and there wasn't much point putting in a stakeholder group before they'd reached a decision because otherwise you're either saying to this group you are looking at badger culling decision in which case it would do nothing else. And also in the end it wasn't their decision to take ministers had to take that decision, or you set them up and said and we don't want you to touch badger culling in which case they'd say hang on a minute, how can we have a sensible discussion if you won't let us discuss badger culling? So, to be frank we let it drift a bit, quite deliberately (Interview Defra official 2).

This extract highlights very well some of the tensions and difficulties of stakeholder engagement. The respondent is, rightly, very clear that ultimately it is for ministers to decide the policy on badger culling. Yet also clearly, once stakeholders are invited to participate in a process there becomes an expectation that their opinion will carry weight. This can perhaps be seen in other policy areas through attempts to almost take the politics out of a decision by setting up independent bodies of various sorts. Surely, where a decision is political, it is simply impossible to take the politics out of a decision or to essentially farm out the 'heat' to another body. In addition, the quote demonstrates the difficulties faced by officials in setting up stakeholder bodies, in setting their terms of reference. To discuss badger culling would be to discuss nothing else and that would not assist policy makers in developing policy. The quote also suggests that while the Core Stakeholder Group played a useful role in developing the strategy, the fundamental differences on badger

culling were bubbling along just under the surface. To retain such a group post-strategy would risk renewing those basic conflicts.

In respect of pre-movement testing there seems to have been a difficulty with trust. The Core Stakeholder Group was aware that there were proposals for pre-movement testing and for changes in the compensation regime. However, the matter was delayed a bit and this led to problems for officials. Again, from the interview with the same official:

> 'We had meant to have a discussion with the core stakeholder group but everything got very sensitive and ministers got very nervous about who was involved in discussions at that stage and frankly it wasn't practical to have any further discussions with them. So by the time we actually came to an announcement in December precisely the makeup of that wasn't that close – it had elements but it was rather different from core stakeholder group, from the positions we'd discussed with core stakeholder group. Which inevitably, for some of those people, enhanced the idea that government hadn't played entirely fair'

Trust problems seemed to flow in both directions with ministers wary of who was involved in discussions and some stakeholders taking the view that government had tended to ignore stakeholder views.

A fresh look at stakeholder engagement was considered necessary. Discussions on the form of stakeholder dialogue that should flow from the 2005 Strategy tended to be agreed that there was no going back to the TB Forum and that a body where people were appointed as individuals was more appropriate than one where stakeholders came together as representatives. In addition, regular

dialogue was not considered to be essential as the issues around bTB tended not to be fast moving. Therefore a two strand approach was adopted. A TB Advisory Group of people appointed on their own merits which would be a small group, and an annual conference of stakeholders 'to ensure that key stakeholders are kept up to speed with what was going on' (Interview Defra official 2).

Peter Jinman, a veterinary surgeon from Herefordshire was appointed Chairman of the TB Advisory Group in July 2006. Jinman also serves as a member of the EIG. Four other members were appointed in October 2006. Two are farmers from bTB hotspots, one is the Chief Executive of the Universities Federation for Animal Welfare, and one is a Reader in Wildlife epidemiology at the Institute of Zoology, London. Defra say that the terms of reference for the group include obtaining stakeholder buy-in to TB control policies. In addition the TB Advisory Group will help to deliver the aims of the 2005 Strategy by:

- 'advising on development and implementation of bovine TB control policies in England providing in particular a practical perspective;

- Working with interested organisations to take account of wider views in developing advice and also to help promote a shared understanding;

- Responding to requests for advice from ministers and the CVO, and identifying and advising on issues of concern to interested organisations' (Defra 2006c).

By July 2007, the TB Advisory Group has offered advice on two issues to ministers and the CVO. One piece of advice on husbandry best practice, and one on pre-movement testing in respect of practical delivery and impacts of pre-movement testing. The group has held five meetings since its creation but had no stakeholder engagements. So far, then, the group has steered clear of offering advice on badger culling or on the ISG's report. The second strand of stakeholder engagement, a national TB conference, has not so far been held.

Pre-movement testing

One area in which stakeholder engagement has been difficult has already been mentioned, the issue of pre-movement testing. Pre-movement testing of animals for bTB is one of the key cattle based measures together with the routine testing regime. It is a measure that was supported without exception by vets interviewed for this research, one vet saying that 'It's for the good of everybody. Yeah, it should have happened ages ago' (Interview Practice vet 2). However, the NFU raised a number of objections to the measure. Again, a quote from an interview with an official demonstrates some of the problems faced.

> 'There was an increasing furore stirred up by the NFU and the livestock auctioneers which focussed

> particularly, you know, frankly they just didn't want it – livestock auctioneers opposed it in principle, NFU said they don't oppose it in principle but we're not having it until you introduce badger culling. And more and more mud has been thrown about lack of preparedness and in the end the issue they really focussed on was lack of capacity, lack of veterinary capacity to do pre movement testing. And they threw so much mud around that ministers decided they had to delay. And we'd commissioned an independent study to look at the veterinary capacity issue and there was not an issue there; the veterinary bodies had said all along that there wasn't an issue, but that alone was not enough in the face of lots of, NFU in particular fuss. And then they made a fuss again about the payment issue and we agreed to pay until the end of June. We changed our policy again, … despite the fact that the benefit we gave by agreeing to pay for one test per farm until the end of June for pre movement testing did not really match in any way those who were in difficulties because of the delay in single payments' (Interview Defra official 2).

It seems clear from this that the NFU approach was to see the issue as worthy of a trade off in return for badger culling. It also seems clear that the NFU has particular problems with the cost sharing element of the AHWS and the TB Strategy, being seemingly unwilling to incur more of the costs of what is a disease solely of importance to the farming industry unless it is in return for something else such as badger culling. The strategy of the NFU of continually raising new objections has been described as 'foot stamping' (Interview Defra official 2). It still seems that on the issue of bTB, the NFU retains a privileged position among stakeholders having access to ministers on a regular basis in contrast to the Badger Trust, say, that does not have such access. Indeed, the minister told me that he 'hadn't seen the Badger Trust for some time but we do talk on a fairly regular basis' (Interview Ben Bradshaw). Although many respondents were keen to say that the relationship between Defra and the NFU

was different to what is was under MAFF (Interview Defra official 3, Ben Bradshaw), on bTB the NFU still has significant successes demonstrating that 'Foot stamping quite often still gets what they want' (Interview Defra official 2).

CONCLUSION

This chapter has looked at bovine tuberculosis and sought to examine a number of aspects of policy in this field. Primarily, this case study, - though having some similarities with the Animal Health and Welfare Strategy - reveals significant differences in key areas under examination, namely, the governance methods used, and the use of science and the approach to evidence. All have impacted on policy on bTB.

Firstly, unlike the AHWS, bTB is a policy that is characterised by dispute, especially over the role of badgers and badger culling, and a definite lack of stakeholder consensus. This lack of stakeholder consensus has created significant difficulties for policy makers in governing the strategy and engaging with stakeholders.

The response to these difficulties has included creating structures that differ in the degree of openness and breadth of participation by stakeholders. The TB Advisory Group is significantly smaller in size than the EIG and holds its meetings largely in private although a summary of discussions of the group is published on the Defra web site. Interestingly, of the five meetings that had

taken place during the data collection period for this case study, three had no formal agenda published on the group's webpage. Furthermore, in response to Defra's difficulties in dealing with a wide range of stakeholders, part of this task has been delegated to the Advisory Group, charged with obtaining stakeholder buy-in to TB control policies. Wider stakeholder participation, and presumably dispute, has been relocated to the safer arena of a conference. The decision to move away from an open and participatory stakeholder body like the EIG and to appoint a small, essentially expert group, is more characteristic of older policy making structures rather than the discourse of openness that runs through recent animal health policies.

Among stakeholders, the interview data appears to suggest that the NFU retains a position of significance and influence as shown by the delays in implementing the policy of pre-movement testing. The NFU itself seems to adopt an approach of bargaining and exchange. For example, it took the position that badger culling should be given as a quid pro quo in return for agreement on pre-movement testing. In thinking about the issue in this way, the NFU fails to understand the government's commitment to evidence based policy making, and the need for evidence that badger culling works before ministers will permit it. Rather, the NFU appears to believe that a relationship between it and Defra exists that had parallels with its position with MAFF.

The area of policy where evidence has been given a prime position is the question of whether badger culling should form part of a control strategy. The ISG was charged with carrying out experiments to determine the effects of

badger culling and it came to the conclusion that badger culling would be unlikely to be effective, at least in any way which would be cost effective. However, as has already been shown, Defra has gone to considerable lengths not to rule out culling as a possible future option for policy which suggests that Defra is very keen to keep the NFU on board with engagement in TB and the AHWS.

This chapter has shown the limits of Defra's commitment to a new governance approach to policy making in animal health. While the AHWS case has shown room for agreement and compromise among stakeholders, this is not present in bTB. This lack of agreement has severely tested Defra's commitment to a new way of working. In this case, stakeholder participation has not been possible on the lines of the EIG and discussion has, instead, been transferred to a largely expert group on the TB Advisory Group. Furthermore, the example of public consultation on badger culling was of debatable use, although the size of the response and the weight of objection to the cull offered ministers some idea of the problems they might face if they went for a cull.

However, Defra is having some success in bringing about some changes. For example, although delayed, pre-movement tested was introduced. In addition, the problem of systematic over-valuation was also tackled. Furthermore, a zero-tolerance approach to missed bTB tests is now in place. Thus, some costs and responsibilities have managed to be shared despite the objections of the NFU.

Chapter 7: Modelling policy change

Is it possible to explain the changes in animal health policy using the toolkit available to the political scientist? The previous chapters have explained what the new policies are and which factors led to institutional change. In addition, the case studies have described what happened and how new governance structures have worked in practice. In doing this, these chapters have been partially framed by the Bevir and Rhodes interpretive approach (Bevir and Rhodes 2003, 2006, 2006b), in particular by their idea of 'the recovering of other peoples' beliefs from practices, actions, texts, interviews and speeches' (Bevir and Rhodes 2006b, p.106). In this chapter a policy network approach is employed to try to explain the changes and continuities within animal health policy within the structured context of a formal model, the dialectical model of Marsh and Smith (2000).

The previous three chapters have examined Britain's animal health policy looking both at the policies themselves and at the various factors that contributed to institutional change. This change is most clearly observed in the replacement of MAFF by Defra. However, perhaps more importantly, these chapters have shown how the traditional Westminster model of governance was replaced by new governance where the boundaries between the public and private sectors have become blurred. Institutionally this shift can be observed in such bodies as the EIG.

What is the policy network?

To start to think about animal health policy in policy network terms, it is necessary to be clear about what is meant by the policy network. If the typology of policy networks outlined by Marsh and Rhodes (1992) is considered, as discussed in chapter two, it is reasonable to characterise the MAFF era as clearly being at the policy community end of the spectrum. Indeed, Smith (1990, 1993) argues that British agricultural policy has been subject to a dominant primary policy community since the end of World War Two. The key relationship in this community was the one between MAFF and the National Farmers' Union (NFU). While this may certainly have been the case for agricultural policy as a whole, does the same hold true for present day animal health policy? Indeed, as discussed in chapter four, Jordan et al (1994) doubted whether this dominant policy community was the case even under the MAFF regime, citing some of the agenda around environmental concerns, and identifying various other bodies as playing significant roles within the agricultural policy sector as evidence.

As an alternative, Jordan et al propose a fragmented model of different policy communities operating at a sub-sectoral level rather than a single MAFF wide community. For them, 'Our agricultural policy map is congested with detailed and overlapping sub-sectoral policy communities' (Jordan et al 1994, p.507). It is necessary here to note that in using the term 'policy community', Jordan et al (1994) do not understand the term in the same sense as Marsh and Rhodes (1992). They do not understand the term as one end of a continuum of possible

policy networks but, rather, hold the more traditional meaning of the word 'community' as an organised body. However, to be a policy community even at the sub-sectoral level there needs to be a shared view of the problem (Jordan 1990, p.327).

This more fragmented approach has some advantages when looking at the agricultural policy sector. While the NFU may be a leading member of the agricultural policy community in the Marsh and Rhodes sense, the sheer range of niche policy areas within the broad sector lends support to Jordan *et al's* notion of sub-sectoral policy communities. Thinking back to chapters five and six of this thesis, plenty of evidence is found there to suggest that, if the NFU could once be seen as primus inter pares, in the contemporary policy environment a much broader range of interests has a real influence. What power the NFU retains results from its position as a leading member of several of these overlapping communities and not, as Smith (1993) argues, as the dominant member of a single sectoral policy community (Jordan et al 1994, p.513). Academic studies of some of these niche policy areas within the agricultural sector also give support to the idea of sub-sectoral policy communities. Greer (2002), for example, sees the policy network around organic agriculture as a distinct policy domain, separate from a primary agricultural policy community Indeed, 'the established policy communities are finding it increasingly difficult to control policy development and to continue to exclude such alternative viewpoints as the organic one from debate on the future of agriculture' (Greer 2002, p. 460).

Being clear about what precisely constitutes a policy network is thus a far from easy task. Marsh and Rhodes (1992) certainly use case studies in which the network is identified at a sectoral level. However, as Daugbjerg and Marsh (1998) point out Marsh and Rhodes 'emphasise that whether networks occur, at what level they occur and the nature of the relationship between networks at the two levels are all empirical questions' (Daugbjerg and Marsh 1998, p.53). In respect of animal health policy the question must be asked, who is in the network? Furthermore, in respect of the case studies in this thesis, it is reasonable to ask if the network around bovine TB differs from the network around implementation of the Animal Health and Welfare Strategy. It is to this empirical question that attention now turns.

The animal health policy network

Given that participants in a policy network do not possess a card to prove their membership of the network any description of who is a member and who not is likely to be open to challenge. The new governance approach adopted in animal health policy adds further difficulty in determining network membership. Are stakeholders necessarily members of the network?

Considering animal health policy, a reasonable starting point in determining network membership must be the structures that exist to implement the policy. By policy, it is meant the implementation of the AHWS and the initiatives that flow from that process of implementation. What follows is an assessment of network membership under Defra and those structures such as the EIG that

have been created specifically to implement the AHWS. When the relationships identified in the Marsh and Smith model are considered, then the question of network change over time will be addressed.

Defra itself must be a candidate for network membership. Its officials enforce animal health regulation, service the EIG, draft primary legislation and statutory instruments, its ministers bear final political responsibility for animal health policy. In short, it is difficult if not impossible to think about an animal health policy network that Defra is not a member of. In terms of resources too, Defra brings with it money and expertise. Clearly, therefore, Defra is a member of the network.

The EIG is tasked with implementing the AHWS. It is reasonable, then, to consider the EIG as a member. Its chairman has considerable access to officials and ministers and as it has carried out its work it has acquired an identity for itself, established itself as an actor within the network that transcends whatever institutional affiliations that its individual members may have. The membership of the EIG gives clues to other members of the policy network. Producer interests are represented on the EIG and it is reasonable to conclude that producer interests are members of the network. The precise identity of individual members may be more tricky to establish, but the NFU, major industry bodies for various sectors of animal husbandry may be considered members. The veterinary profession must also be considered a member of this sub-sectoral policy network, so the BVA and BCVA and others are in. The retail industry, especially supermarkets can also be considered as members

from the presence on the EIG of a supermarket executive. Local authorities have a role in implementing a number of regulations associated with animal health, so local authorities are members of the network.

In addition to these, there are a number of bodies with a specific interest in animal welfare who might claim membership of the policy network. Chief among these are the Farm Animal Welfare Council (FAWC) and the RSPCA. The RSPCA has a specific interest as its 'Freedom Foods' label is one way in which the EIG has sought to promote labelling as a means of distinguishing higher standards of animal welfare in food production. More radical animal welfare groups which challenge the essential industrialisation of animal production such as Compassion in World Farming, although not excluded from attending meetings of the EIG, cannot be considered members of the network since they exclude themselves by virtue of not accepting the shared approach required of a policy network.

Although bTB is part of animal health policy, it has been dealt with slightly differently and passed on to a separate body under EIG oversight. The nature of NFU involvement is slightly different with one interview respondent suggesting that NFU policy on bTB was driven by the South West region (interview Defra official 2). In addition, as the question of badger involvement in the spread of the disease among cattle is an important sticking point of policy, wildlife groups, especially the Badger Trust, are members of the policy sub-network around bTB yet play little or no part in broader animal health policy. The centrality of the badger issue in bTB policy has meant that it

proved impossible for the network to exclude the Badger Trust despite it not sharing the approach to the disease favoured both by industry and veterinary members. However, the recently created TB Advisory Group has been set up without Badger Trust membership. The question of badger involvement also brings into this policy network, but not the animal health network generally, the ISG. Finally, empirical research for chapter six suggested that valuers and auctioneers were participatory members of the bTB network to a much greater extent than with animal health policy more widely.

To conclude this section, it can be seen that animal health policy has generated a policy network at the sub-sectoral level. This network is centred around Defra and the EIG. Producer interests are well represented and as chapter five showed, the network has not sought to challenge the fundamental basis of animal production in this country as a means of improving animal health and welfare. Bovine TB should be seen as a special case of a network with no unifying, consensual approach to policy. The badger question, as shown in chapter six has so paralysed network relationships that policy making has been rendered difficult in the extreme. Having looked at network membership, it is now time to analyse animal health policy using the Marsh and Smith model described in chapter two.

FEATURES OF THE MARSH AND SMITH MODEL

The Marsh and Smith model posits three relationships which they term dialectical. This ought not to be understood in the Marxian sense, but rather, as

Marsh and Smith put it, ‘an interactive relationship between two variables in which each affects the other in a continuing iterative process’ (Marsh and Smith 2000, p.5). The need for a continuing process answered one perceived weakness of policy network analysis, that it tended to a static approach of looking at the network at a particular moment in time and that a more dynamic approach was required (Hay 1998). The dialectical model proposed by Marsh and Smith built upon this earlier work by Hay (1998) and Marsh (1998). Chapter two described the features of the Marsh and Smith model and noted that the three relationships they identified were those between: structure and agency, network and context and policy and outcome. In this section each of these relationships is examined more closely.

Structure and agency

For Marsh and Smith previously existing approaches to policy networks had privileged either structure or agency. That is, either policy outcomes are a consequence of bargaining between actors within the network (a rational choice approach) or the structures of the network themselves were decisive in determining policy outcome. Marsh and Smith seek to move beyond this binary distinction. For them, agents alone cannot explain policy outcome. Rational choice perspectives fail to recognise that within a network actors may not necessarily have a free choice of actions. Although agents may act rationally, that rationality is a bounded rationality; the agent’s choices are constrained by the structures in which the agent finds herself.

Marsh and Smith make two points about structures. The first is, as above, that structures act both to constrain agents but also to facilitate them. Secondly, the culture of a network is important and this culture also acts both as a constraint and an opportunity for its members (Marsh and Smith 2000, p. 5). This cultural element to policy networks was recognised by Marsh and Rhodes in their concept of a policy community. Within a policy community the shared culture and approach to a policy problem acts as a constraint on behaviour and policy choices. Thus, in chapter three, MAFF's understanding of BSE as essentially an animal health problem can be seen as a consequence of the shared approach and culture of MAFF. The decisions MAFF made in the BSE case can be seen as almost inevitable given this cultural dimension to the network.

However, for Marsh and Smith structures alone do not explain outcomes. Decisions are made not by structures but by agents working within those structures. Three points are made about agents. Their interests may not solely be defined by network membership. Agents may hold membership of more than one network that may overlap or conflict with their membership of the network in question. Secondly, the agent must perceive the opportunities offered by the network for themselves and, finally, the particular skills of the agent affect their ability to utilize the opportunities offered by the network (Marsh and Smith 2000, p. 6-7).

For Marsh and Smith, therefore, it is neither agents nor structures which determine outcome but the relationship between the two. A skilful agent will gain more than a less skilful agent, but all are not completely free in the

choices available to them. Within these structural constraints agents are not the utility maximisers of rational choice theory but utility satisfiers.

Network and context

As discussed in chapter two, existing policy network analysis tended to explain policy change in terms of factors endogenous or exogenous to the network. For Marsh and Smith this distinction is of little value and they argue that there is a need to recognise that 'there is a dialectical relationship between the network and the broader context in which it is located' (Marsh and Smith 2000, p.7).

Marsh and Smith argue that policy networks reflect broader inequalities found in society such as those based upon class and gender. In their study of the GM crops issue, Toke and Marsh (2003) note that biotechnology and farming interests held a privileged place in that policy network 'as sponsored client groups of MAFF' (Toke and Marsh 2003, p.244). They also argue that economic and, in the GM crops case, professional interests dominate the network but they 'do not claim here that the dominant network reflects class interests, but it is clear that it is economic, and to a lesser extent professional, interests that dominate the networks' (Toke and Marsh 2003, p. 244). So, Toke and Marsh interpret broader inequality based on class in terms of the attainment of a privileged position in the GM policy network of 'entrenched economic interests' (Toke and Marsh 2003, p.244) and professional interests rather than other middle class interests represented by pressure groups such as

Friends of the Earth, Greenpeace and the Soil Association which are excluded from the GM policy network.

Marsh and Smith's second insight into the relationship between network and context is that 'network structure, network change and the policy outcome may be partially explained by reference to factors exogenous to the network, but these contextual factors are dialectically related to network structure and network interaction' (Marsh and Smith 2000, p.7). Significant sources of exogenous influence on a network are other networks. In addition political, economic or knowledge-based challenges to a network are also regarded as important (Marsh and Smith 2000, p.8). These exogenous influences may, for Marsh and Smith, have effects that range from altering relationships within a network to bringing about new policies or even resulting in the breakdown of the network. However, 'All such exogenous change is mediated through the understanding of agents and interpreted in the context of the structures / norms and interpersonal relationships within the network' (Marsh and Smith 2000, p. 9).

Network and outcomes

Marsh and Smith argue that existing literature on policy networks focussed on the extent to which networks affected policy outcomes. However, for them, it is important to recognise that policy outcomes also affect the shape of the policy network and that the relationship between network and policy outcomes is not one that is unidirectional (Marsh and Smith 2000, p.9).

Marsh and Smith note three ways in which outcomes may affect policy networks. A policy outcome may lead to a change in either the membership of the policy network or to a change in the balance of resources of the members within the network. Marsh and Smith give examples of Conservative government policies which resulted in the removal or the considerable reduction in influence of the trades unions within some policy networks (Marsh and Smith 2000, p.9). Related to this, policy outcomes may weaken the position of a particular interest in a network or networks. Conservative economic policies in the 1980s, for example, weakened the trades unions not simply within particular policy networks, but also within the broader structure of society (Marsh and Smith 2000, p. 9). Thirdly, policy outcomes act as a learning experience for agents. Agents learn from the results of strategies adopted and abandon or continue them depending upon the benefits of those actions to the agent (Marsh and Smith 2000, p.9).

USING THE MODEL

Having discussed in some detail the three relationships identified in the Marsh and Smith model and identified the range of actors to be found in the network, it is now possible to discuss animal health policy in terms of the model's three relationships.

The dialectical relationship between structure and agency

What is striking when thinking about the structures within the animal health policy network is the range of actors and structures that comprise the network. Indeed, this very complexity, especially in delivery was identified as a weakness in animal health policy in a review of the delivery landscape carried out for Defra by David Eves (Eves 2006). Part of the structure of the network, then, is the large number of bodies with a role to play in delivery. However, many of these bodies are part of Defra either as 'core' Defra or established as executive agencies of Defra as new governance inspired reforms under New Public Management.

Toke and Marsh in discussing structure in relationship to GM crops accept the notion of a dominant discourse as a structure in itself (Toke and Marsh 2003, p.239). In the GM crops debate, the dominant discourse included a limited interpretation of what was meant by environmental testing (that it should be restricted to examining the effect on wildlife). The effect of the dominant discourse was to exclude groups from the network who rejected this discourse. As how a problem is conceptualised influences what issues are important, the dominant discourse also restricts the range of policy options on the agenda. By defining the problem and limiting the agenda, the dominant discourse acts as a structural constraint, excluding otherwise credible scientific and economic interests. 'Indeed the network structure is designed precisely to achieve this aim' (Toke and Marsh 2003, p.239). In animal health policy the effects of a dominant discourse can be observed in the cases of BSE and FMD. During the

BSE period, those rejecting the framing of the problem as one of animal health were excluded from the network. This can be seen in the cases of dissident scientists like Alan Dickinson and Harash Narang, as well as in the reluctance with which MAFF accepted the involvement of the Department of Health (DH) in the Southwood Committee. While BSE was nominally therefore a joint venture between the two policy networks of agriculture and health, in practice, at least until 1996, DH members were expected to conform to the dominant discourse that BSE was an animal health problem and thus not likely to pose a significant risk to human health. Thus, by being selective in which actors were admitted to the network either by prior socialisation within the primary agricultural network in the case of MAFF actors, or by selection of advisory committee members based upon selection of the right sort of person for the job (qua Jasanoff), the structure of the network was such that while policy was made by actors, they did so within the context of a structure that was predisposed toward particular policy choices.

A dominant discourse can be observed too when considering the 2001 FMD outbreak. Again, network membership was limited and confined to those actors sharing the dominant discourse that eradication of FMD and the protection of the UK's export market were the primary goals of policy. Organisations like the Soil Association, a key member of the organic food sub-sectoral network were rigorously excluded from influence in the policy network dealing with FMD at this time. Other competing networks such as that supporting tourism were also excluded by virtue of the fact that FMD was framed as an animal health policy problem. Here, the particular strength of the NFU can be seen at

work in its successful moves to prevent the introduction of a vaccination regime to help contain the outbreak. So in the cases of both BSE and FMD we can see that the network was able to privilege policy preferences by limiting membership of the network.

This study has not used the term dominant discourse in the case of animal health policy. However, mention has been made of the need for members to accept a shared understanding of the policy area in order to be accepted into the network. This shared understanding involves a willingness not to challenge the fundamental basis of industrialised animal production in the UK. The Soil Association has gained membership in the person of EIG Chair Helen Browning. However, as discussed in chapter five, her appointment as Chair was in a personal capacity and not as a representative of the Soil Association. Furthermore, the Soil Association enjoys a key role within another niche policy network within Defra that of organic food (Greer 2002). So the Soil Association can be seen as having some credibility within Defra. In the animal health policy network, Helen Browning has not sought to challenge the shared understanding of animal health, or dominant discourse, despite the sometimes critical official position adopted by the Soil Association, although as shown in chapter five, has pressed for fuller understanding and consideration of animal welfare. As Toke and Marsh accept a dominant discourse as a structural constraint in the case of GM crops, so may it be accepted as such in the case of animal health.

The position of the EIG itself is complex. As the body with responsibility to implement the AHWS it is certainly an agent in the policy process. However, the EIG also functions as one of the structures through which stakeholders can articulate their preferences. The EIG prefers to function on the basis of consensus, a preference which requires the EIG members to accommodate the preferences of other members of the EIG when considering their own positions. The EIG is thus an example of an organisation that is itself an agent. Marsh and Smith do not make a distinction between an agent as an individual and an agent as an organisation. For Marsh and Smith agents are 'strategically calculating subjects' (Marsh and Smith 2000, p.6). However, as Toke and Marsh recognise, these calculations in the case of an organisation as agent are influenced by both the norms of the group and the objectives of the individuals concerned. This is certainly the case in respect of the EIG.

In chapter five, the EIG was presented as an example of a body influenced by the ideas of new governance. The agencies created during the period of Conservative government under the guidance of New Public Management can be seen as first generation governance structures. New bodies such as the EIG can be seen as second generation new governance, an institutional response to coordinate the disparate groups and bodies with an interest in animal health. More broadly, new governance can be seen as a structural element as, with the hollowing out of the state, the role of non-state actors in delivering animal health policy became more important.

Animal health policy can be seen as a good example of outcomes being a consequence of a continuing process of interaction between agents and structures as predicted by the Marsh and Smith model. Entry to the network is dependent upon accepting the dominant discourse which acts as a limitation on the actions that individual agents can undertake. Members of supposedly oppositional groups such as the Soil Association have been obliged to limit their opposition and to work within the requirement to operate in a consensual manner within the EIG.

So, examined through the lens of the dialectical model of policy networks, actors make the policy decisions but those decisions are taken in a structural context. There is value in considering Rhodes and Marsh's 1992 schema of policy networks in relation to agents actions. If we consider a policy network that lies toward the issue network end of the spectrum, it can be seen that with a larger membership of the network, greater space exists for a diversity of opinion. No one group or small collection of groups has the resources to create a dominant discourse and effectively exclude significant groups from the network. Actors in such a network thus have greater space in which to take decisions. The EU policy network on environmental policy is a good example of a diverse issue network. Within a policy community such as the UK's agricultural policy community with a small number of members, the scope for development of a dominant discourse within the network is greater. In this case, the division of the network into sub-sectoral networks reinforces that tendency. Big players such as MAFF and the NFU were able to gain membership across the range of sub-sectoral networks and able to set the

agenda for those sub-sectoral groups. Outside bodies, such as biotechnology companies or the Soil Association were admitted into particular sub-sectoral networks where they possessed resources which were of value to the network as a whole, but were rigorously excluded from those sub sectors where their interests differed from the overarching policy aims of the sectoral level network.

The actions of individual agents are also constrained by their expectations of what will prove acceptable to the wider network. In BSE for example, Millstone and van Zwanenberg argue that soon after its creation the Southwood Committee 'started, in effect, to acquiesce with the Government's risk communication priorities' (Millstone and van Zwanenberg 2001, p.104). Furthermore the same authors describe, quoting from Southwood himself, how the committee felt that it had to tailor its recommendations such that they might be acceptable politically by MAFF (Millstone and van Zwanenberg 2001, p.106). This seems clear evidence to show that network structures do indeed have an influence on agents' behaviour. Similarly, powerful actors within the network, those with the greatest resources, can use their position to maximise their influence upon policy outcome. A good example here is the ability of the NFU to prevent a vaccination strategy in the FMD outbreak. The constraints on powerful actors are perhaps not as great as on those in a weaker position, a relationship itself which suggests that power and therefore agency are constrained by institutional structures.

The dialectical relationship between network and context

The Marsh and Smith model is effective in identifying that networks are not discrete islands with complete power over their dominion. Within animal health policy external context existed in the BSE case in the form of interaction with another network (the DH) and by the action of consumers. The latter led to a campaign of trying to allay public fears over the safety of British beef. Thus risk communication can form part of the broader context in which the network operated. During the 2001 FMD outbreak, awareness of the political context is critical in understanding the action of the network. Also in FMD we see the MAFF-centred network supplanted by the Prime Minister and his close advisors – an example of the exercise of political authority to over-ride the network supposedly charged with handling the policy. In addition, government preferred to use the advice of an outside group of scientists rather than a group from within the MAFF network.

In their study of policy networks and the GM crops issue Toke and Marsh identified five dimensions of the context in which the policy network operates. These are: 'societal structural constraints; public opinion; Europe; other networks; and risk aversion' (Toke and Marsh 2003, p.244). As these authors utilised the dialectical model in their analysis, their approach is adopted here also. Each of the Toke and Marsh contextual factors are now examined in turn.

Societal structural change: Policy networks reflect the broader pattern of structured inequality (Marsh and Smith 2000, p.7). Societal inequalities of

class, race and gender will thus be reflected in network membership and structure. Most importantly, economically powerful groups are likely to attain powerful positions within the network. Thus, historically, MAFF and the NFU representing the economic power of the state and the farming industry held sway across the agricultural network including animal health. Radical groups such as the Soil Association, while being primarily middle class in composition and outlook, do not represent entrenched economic interests (save in the case of the organic food sub-sectoral network where the Soil Association is a key player) and are excluded from the network.

However, in the case of animal health policy, these economic considerations have been influenced by a wider government need to keep expenditure on animal health under control. In the case of bovine TB this need to bring expenditure under control has been particularly marked as a rising incidence of the disease has yielded a higher burden on public expenditure in the form of compensation payments to farmers affected by the disease. Chapter six has discussed this in more detail. From a perspective of examining context and the network, the previously privileged position of industry bodies, especially of the NFU has come under sustained challenge. Although industry interests retain a strong position in the network, those interests are now represented by a much broader range of bodies than just the NFU. In the GM crops case although opponents of GM crops are represented by pressure groups with a strong middle class membership such as Greenpeace, these groups are excluded from the GM policy network on the basis that they do not represent entrenched economic interests (Toke and Marsh 2003, p.244). So, the economic interests

represented in GM crops is the interest of the biotechnology industry as an economic power. In animal health policy the same pattern can be seen with industry interests prominent while more radical groups in the animal health field which may enjoy the support of many middle class people are excluded or limited in their membership.

Public Opinion: When thinking about the recent history of animal health policy public opinion forms part of the context in both the BSE and FMD cases. In BSE, policy makers were concerned to reassure consumers about the safety of British beef. This led to a number of statements asserting, without scientific evidence to support the claims, that beef was safe to eat. The management of public opinion in BSE was an important objective of policy in so far as it handled risk communication. Phillips observes,

> 'Throughout the BSE story, the approach to communication of risk was shaped by a consuming fear of provoking an irrational public scare. This applied not merely to the government, but to advisory committees, to those responsible for the safety of medicines, to Chief Medical Officers and to the Meat and Livestock Commission. All witnesses agreed that information should not be withheld from the public, but some spoke of the need to control the manner of its release. Mr Meldrum [Chief Veterinary Officer] spoke of the desirability of releasing information 'in an orderly fashion' – of ensuring that the whole package of information was put together, taking care in the process not to 'rock the boat' (Phillips 2000, para. 1.1294).

Thus, while it does not appear to have been the intention to deliberately deceive the public, clearly there was concern that risk communication should not lead to alarm and a loss of confidence in the safety of British beef. Post BSE, the May Guidelines (OST 2000) had openness as one of its objectives.

By the time of FMD, public opinion again provided an important element of the context in which the policy network operated. At the start of the outbreak there was a great deal of support for the farming community, and restrictions on access to the countryside enjoyed public support and compliance. Yet, public opinion did begin to become more critical once the outbreak proved more long lasting than anticipated and as funeral pyres and problems for the tourism industry began to become apparent.

Public opinion does not appear to have played a significant role in the management of the Animal Health and Welfare Strategy. In general, matters discussed under its remit have not generated sufficient public controversy for public opinion to seriously impact upon the working of the network. Generally, the AHWS approach has been to manage the opinion of stakeholders in support of the strategy rather than direct engagement or conflict with public opinion more broadly as chapter five has shown. Public opinion has been a factor in two current animal health problems. In the case of avian influenza (AI), this was perceived as a need to be shown to be on top of things and to have a clear plan. Indeed, AI as a disease resulted in resources within Defra being reallocated from other animal health policy areas in response to what was seen as an immediate threat resulting in some delays in the progressing of the AHWS (observation of remark by Defra official at an EIG meeting). The other disease where public opinion had a significant role to play is bTB. Chapter six discusses in detail the process of public consultation on the question of badger culling. From an analytical perspective, it may be held that it is significant that the network set up a smaller sub-network to handle

specifically tuberculosis. This can be seen as an attempt to prevent the broader AHWS becoming bogged down with bTB but also, arguably, to prevent public opinion from becoming engaged with broad animal health policy.

Europe: The EU is an important element in the context within which UK animal health policy is determined as UK policy must conform to EU regulations. The EU was the body with the final power to restore the ability of the UK to export beef after both BSE and FMD. The Over Thirty Months Scheme, whereby cattle over that age were culled and prevented from entering the food chain with compensation payable to farmers was introduced on the advice of the EU. Other EU member states also had their own public opinion to worry about and this too, will have shaped their response to a degree. Less heralded is the role of the EU in funding the compensation scheme during BSE. Some 70% of slaughter compensation funds had an EU origin although this is reduced in reality as greater EU support had the effect of reducing Britain's rebate from the EU. The EU is estimated to ultimately pick up 25% of the bill for culling cattle (Grant 1997, p.346). The EU played a similar role during the 2001 FMD outbreak. The export ban on British cattle was both introduced and lifted by the EU. Thus in animal health, as in so many other policy fields, Europe plays a key role both as context in which the national policy network operates but also as a policy network in its own right.

Other Networks: The role of other networks is important. The EU as another policy network has already been mentioned, but other, domestic policy networks impact on animal health policy too. Looking first at recent animal

health problems, during the BSE crisis, as fears over human health became more grounded, the DH policy network assumed increasing importance. This is evidenced by the fact that it was a health minister who announced that BSE was the likely cause of the vCJD in 1996. The increasing role of the DH also reflected a partial redefining of BSE as a policy problem. While it could be defined in terms of an animal health problem, MAFF was always likely to remain the lead department. Once BSE became redefined as a human health problem as well as an animal health one, the DH was able to increase its involvement. However, research into BSE appears to show that there was little conflict between MAFF and the DH over BSE (Winter 1996, p.560).

During FMD, a competing policy network for the tourism industry was successfully excluded from influence by the MAFF-dominated animal health network. However, the influence of the Prime Minister's Cabinet Office was not able to be excluded. Marsh and Smith argue that the Prime Minister can effect change if s/he so wishes, although the political costs may be high. Furthermore 'it is difficult… for network members to ignore direct political pressure for change' (Marsh and Smith 2000, p.8). Here the Prime Minister's influence was decisive in directing policy. The role of the PM's science advisor David King was considerable. Dr King often appearing on the influential Radio 4 programme Today to explain policy. The PM's influence can also be seen in the government's use of the Imperial College team's epidemiological model in preference to that of MAFF's own team as discussed in chapter three.

With present animal health policy, new governance has been argued as a structural constraint on the animal health policy network. However, it can also be seen as a broader component of the context within which the network operates. The New Public Management reforms of the Conservative governments of the 1980s and '90s exercised a significant influence on how government operated across all policy sectors. As chapter three explained, NPM undermined the traditional public sector ethos of the civil service and replaced it with a more market oriented approach based around performance indicators, targets and a growing tendency to create executive agencies to implement policy. The Labour government elected in 1997 did not seek to reverse the trend toward new governance but embraced it. However, within animal health policy, the government sought to take steps to better coordinate policy by creating new structures such as the EIG.

Because of the significance of the bovine TB issue and the associated controversy, the animal health policy network has tried to create a separate sub-network to handle that disease, an issue network in the Marsh and Rhodes (1992) schema has emerged to handle that particular policy. Observations at EIG meetings show that for some industry interests a decision on bTB, especially on badger culling would impact upon their approach to wider animal health policy cooperation. Indeed, following the very recent announcement by Hilary Benn that the government had decided not to proceed with a cull of badgers, the NFU immediately announced that it was withdrawing from discussions on responsibility and cost sharing (Farmers Weekly Interactive 8 July 2008).

The present policy network for animal health is a recent creation emerging from the publication of the Animal Health and Welfare Strategy in 2002. The network centred around the EIG is clearly different in how it works and more diffuse in its membership than the more closed policy community type arrangement that could be observed around the central relationship between MAFF and the NFU. In trying to explain network change the dialectical model favours neither endogenous nor exogenous factors as determining network change but argues that changes in the external environment are interpreted within the structure of the network. However, within animal health policy, it can be argued that exogenous factors, most particularly the government wide movement towards new governance are most important when considering network change.

This is an example of political change, one of four categories of change in networks' external environment identified by Marsh and Rhodes (1992). The challenge posed by new governance required the network to change, to adapt to the realities of needing to work in a partnership way rather than in the traditional Westminster model approach. However, economic change also contributed to network change. As farming became a less important aspect of the rural economy, so the policy need to consider other rural interests grew, as was shown in chapter four. These external challenges could not be effectively managed in the pre-Defra policy network and so new network structures and with them new policies were required.

Risk-aversion as a cultural context: Toke and Marsh (2003, p.246) identify risk aversion as another element in the context in which policy networks in the GM food case operated. They suggest that environmental groups enjoyed some success in 'plugging in' to an already existing risk society consciousness (Beck 1992). In the case of animal health policy, some aspects of this phenomenon can also be observed. The BSE and FMD episodes have been held to have led to a loss of trust in government use of expertise and pronouncements on food safety. The creation of the independent Food Standards Agency (FSA) may be seen as a response to this problem, with the FSA's ostensibly more open processes having 'some limited value in improving public confidence in the regulatory regime' (Rothstein 2004, p.857).

The relationship between network and outcomes

One advantage of the dialectical model is that rather than simply focussing upon, as the literature tended to, how networks affected policy outcomes, it also considers how policy outcomes have affected the network. The model rejects a unidirectional causal link between networks and outcomes. Animal health policy offers a rich body of evidence to support the assertion that networks affect outcomes and that outcomes affect networks.

Chapter three discussed two policy outcomes in detail which were profoundly affected by the network. In the case of BSE the policy network defined the problem simply as an animal health problem (Greer 1999, p.600) with little risk to human health. This view was supported by MAFF's use of specialist

committees such as Southwood. However, this view turned out to be mistaken; BSE did pose a risk to human health that was only publicly acknowledged after assurances that no risk to human health existed. Arguably, the insulated nature of the MAFF policy network centred around the relationship between MAFF and the NFU led MAFF to favour the protection of the market for beef over protection of the public. One consequence of the BSE case for the network was that public confidence in it dissipated and the network was forced to adjust to this new reality by adopting new procedures that emphasised openness and transparency.

The network influenced policy outcome in the case of the 2001 FMD outbreak. Again, defining the problem as simply one of animal health and not as a broader rural crisis promoted a policy that relied upon the tried and tested method of stamping out the disease by culling, a policy essentially unquestioned and unaltered since the 1920s (Woods 2004a). The relatively closed nature of the network, with a central position for the NFU, was also able to continue to insist on this policy against those who argued for a role for vaccination. As has been shown, although the Cabinet Office and the Prime Minister himself assumed a leading role in handling FMD, it may be argued that this was more a consequence of doubts over MAFF's ability to deliver the policy efficiently rather than a criticism of the policy prescription emanating from the network.

However, within animal health policy outcomes have also most definitely influenced the network. The present arrangements for animal health policy can

be seen to be directly affected by the outcomes of both BSE and FMD policy problems. Perceived difficulties within MAFF resulted in that department being effectively sidelined in handling FMD. The Phillips Report has resulted in a number of changes in the way in which science should be used by government, including the need for openness especially in the need to communicate uncertainty to the public. These changes can be seen as the consequence of outcome affecting network in two ways; firstly, policy outcome, particularly the perception of policy failure affected the composition and structure of the network, and a change in the balance of resources within the network. Within Defra, for example, the farming industry finds itself in the same sectoral network as environment policy. Formally powerful actors like the NFU, cannot expect to have the same level of influence over policy as previously. Secondly, outcomes affect actors within the network. The strategy of risk communication having been considered a failure in BSE, agents modified their behaviour in dealing with FMD. In particular, scientists were employed as explainers of policy to the public directly in an attempt to maintain trust in the rightness of government action. This strategy was recommended in the May guidelines (OST 2000, para.28).

CONCLUSION

Examining the animal health policy network as a whole, it can be seen that the structure of the network has changed over the time period covered. After the 2001 FMD outbreak, MAFF was wound up and replaced by Defra with a new agency, the Food Standards Agency (FSA), created to deal with issues of food

safety. In seeking to explain network change over time the interaction of the network and context, and network and outcomes are important considerations. Interestingly, food safety was taken away from the animal health network after the FMD outbreak which had no implications for human health. By taking a historical view, however, it can be seen that the relationship between the network and context and network and outcomes can explain network change. BSE as an issue showed the weakness of combining animal health and food safety in the same network. However, this weakness was not completely evident until it became clear that in framing BSE as an animal health problem, policy makers had missed the possibility of human health implications of the new disease. Those implications began to become apparent in 1996. The network thus affected the wider context by damaging public trust in its claims of safety. After the change of government in 1997 and the creation of the Phillips Committee, institutional change was put on hold pending the publication of the report. The Phillips Report itself is a huge document, with many recommendations. Time was required to consider these recommendations. However, before FMD appeared, the network had begun to change in its approach somewhat. The OST issued in 2000 guidelines on the use of science in policy making. These guidelines highlighted openness as an objective in the use of science by government (OST 2000, para. 27). The FMD outbreak brought the Prime Minister into contact with the network, supplanting it in policy making terms with his own Cabinet Office. FMD proved to be the catalyst to introduce more wide ranging changes in network structure, but the origin of these changes can be found earlier in the BSE crisis period.

Further drivers for network change can be found in the Labour government's enthusiastic adoption of new governance ideas of partnership working and stakeholder participation. In the new animal health policy network that followed the AHWS, these ideas became institutionalised within the EIG. However, in the case of bTB where no shared understanding of the problem was present among stakeholders, Defra was willing to use more old governance methods to handle the problem. Stakeholder participation was more limited within the network and the meetings of the TB Advisory Group are far less public than those of the EIG. However, even here with bTB, consultation with the public formed an element of Defra's approach to try and find a way forward in a particularly difficult situation for them.

So, it may be held that, overall, the Marsh and Smith dialectical model does offer a useful tool for analysing animal health policy and for explaining network transformation. Admittedly, in animal health policy, that transformation was dramatic, essentially a replacement of one network with a way of doing business by another network with markedly different ways of working. However, the three relationships described by the model are useful in framing the analysis and making clear the two-way nature of those relationships.

In their study of GM crops, Toke and Marsh identify a particular weakness with the model (Toke and Marsh 2003, p.250) They note that the model does not distinguish between individuals and groups as agents. Groups as agents will be influenced in their actions by their own internal norms and problem

definition. Groups may also have greater resources than individuals. However, individual actors such as government ministers are themselves constrained by their position which puts them in the network and also by their relationship with other government departments and ministerial colleagues. However, their position does also give them access to the resources of government. While this is seen as a problem for Toke and Marsh, it is uncertain that such a distinction is either necessary or desirable. Indeed, given that one of the claims of the model is that there is a dialectical relationship between structure and agency, that should hold true whether one is talking about an individual as agent or a group. Perhaps the one exception to this is the Prime Minister's role during the FMD crisis. As an individual agent he was able to invest his personal authority into getting the action he wanted. While this is presented in the analysis above as an example of context influencing network, it may also represent the result of clear political calculation by an individual agent.

Chapter 8: Conclusion

This chapter brings together the findings of this research and directly addresses the research questions set out in chapter one. In addition, some suggestions for future research are offered as are thoughts on the broader implications of this study.

This research was motivated, in part, by a reaction to the events of the 2001 FMD epidemic and the winding up of MAFF as a ministry with responsibility for animal health. Its replacement, Defra, had a wide policy remit. How would Defra manage animal health and would this be different to the way that MAFF operated? This was the central concern of the research. This was translated into the over arching research question:

> Is Defra policy-making qualitatively different to that of MAFF? If so, how, and in what ways, do governance structures and processes reflect that difference?

In addition, two further questions addressed particular case studies:

> How have the new governance structures created by the AHWS worked in practice? How do stakeholders participate in the policy process?

> Has Defra effectively deployed new governance measures to resolve the problems posed by competing interests and uncertain science to produce policy on bovine tuberculosis?

This chapter has three sections. Section one reviews the findings of the research and offers answers to the research questions. Section two takes a look at developments in animal health policy that occurred too recently to have been included in the main body of the thesis and considers how these developments fit with the findings of this research. Section three considers the possibilities for future research in this policy area, and considers the broader implications of this research.

SUMMARY OF FINDINGS

Chapters one and two set the scene and build the foundations of the research. Chapter one detailed the creation of the productivist regime in agriculture and the establishment of a closed policy community centred upon MAFF and the NFU (Smith 1993). This relationship was for several decades a successful one and MAFF was seen as an efficient department (Hennessy 1990).

In chapter two the various methods and theoretical tools used in the research were discussed. A variety of methods were employed in the research. Document analysis, interviews and participant observation were used in the acquisition of the empirical data. Interpretivism, letting actors and documents say for themselves what they think they are doing, guided the document

analysis and some of the case study work (Bevir and Rhodes 2003, 2006). Policy networks were employed as an analytical framework in chapter seven to analyse the process of policy and institutional change. In the animal health field, as in many others, developments such as new public management have had a significant impact. However, the governance literature alone was shown to be somewhat vague with no clear agreement on defining quite what was meant by 'governance.' Policy networks help to give a structure to analyse the impact of new governance ideas on animal health. Like the governance literature, policy networks can work in a context in which the lines between public and private have become blurred. Indeed, policy networks 'can be seen as a precursor to the governance literature' (Raman 2003, p.15) for this reason. The combination of interpretive and policy network methods and frameworks was justified on the basis that they contributed to different aspects of the project and helped to answer different research questions.

Chapter three looked at MAFF and told the story of how its policy making style came under attack from political pressures introduced by a Conservative government implementing NPM measures. In addition, policy problems – salmonella in eggs, BSE and FMD were discussed. These were shown to contribute to the undermining of public confidence in MAFF's handling of animal health issues.

In chapter four, the story of institutional change from MAFF to Defra was completed. It showed that demands for change were present under MAFF. Most importantly, the interface between environment and agriculture and how

demands to consider the needs of the wider rural economy were shown to be most prominent in generating demands for a new department that could address these wider rural concerns.

Chapter four also described the features of Defra as a new department and its responsibilities for both environmental policy as well as agriculture. It was also shown that Defra intended to be different from MAFF and would consider the wider rural economy and not just the needs or demands of farming. The wide range of Defra's responsibilities led to concerns that the interests of farming would be sidelined.

Defra intended to mark a break with the past and made explicit claims that it would forge a new relationship with the farming sector. Defra would also reject the 'Soviet-style' top-down approach to policy and would employ new governance methods to work in partnership with stakeholders and recognised the resources and skills that they could offer. However, as chapter four also showed, even early in its life Defra was under financial pressure and could not do all that it or its stakeholders wanted.

The new policies for animal health that emerged from this new department were discussed. New governance themes were shown to be leading ideas within them. Ideas such as partnership working have prominence in these policies. Farming should not expect Defra to do things for them but should expect to be active participants in delivering good animal health.

Chapter five covered the first case study, the Animal Health and Welfare Strategy and its daughter strategy for veterinary surveillance. The England Implementation Group, it was argued, can be seen as a new sort of institution with the aim of improving policy delivery under a new governance policy style. EIG meetings were open and stakeholder participation encouraged. It was also argued that the role of the EIG was to persuade and encourage industry to take a greater share of responsibility for itself. This chapter also identified a desire to control the cost of animal health policy as important. This desire was seen in two major ways. First, by the emphasis placed by the EIG on the cost and responsibility sharing agenda and also by its encouragement of Farm Health Plans as a means of improving animal health and reducing the likelihood of destructive disease outbreaks. Second, by the use of more targeted surveillance with the establishment of clear reasons for government intervention. Even here, however, government intervention did not necessarily mean that government would be the body paying the bill for that intervention.

Success has been patchy. It was shown that the EIG constructed working meanings for ideas such as partnership, stakeholder and welfare that sat comfortably with the farming industry. The ‘elephant in the room’, as it were was bTB, with progress on responsibility and cost sharing threatened by a decision not to cull badgers combined with industry concerns that the agenda was about passing on costs from Defra to the industry rather than responsibilities.

Chapter five also found that veterinary surveillance had been radically altered. It showed how the workings of the VLA had changed to accommodate the requirements of Defra to the detriment of the needs of the local practice vets who, previously, had been seen as a major customer. An unintended consequence of this was observed to be a reduction in the quantity of private practice work coming to the VLA labs.

Chapter six looked at the second of the two case studies, that of bovine tuberculosis. Bovine TB was shown to be a special case characterised by a lack of stakeholder agreement on the right way to proceed with policy. Two aspects of bTB policy caused significant dispute among stakeholders. Pre-movement testing of cattle for the disease caused significant disquiet among farming interests. It was shown that the NFU was able to delay the implementation of the policy though not, ultimately, to prevent its introduction. However, the NFU was able to succeed in obtaining additional funding to pay for much of this testing on its introduction.

The second aspect of bTB that caused controversy was the question of the role of culling badgers in controlling the disease. On this question there was no possibility for stakeholder agreement – the NFU was for a cull, the Badger Trust equally strongly against it. Defra attempted to use scientific evidence to plot a way forward but found that this evidence was contested with both sides of the debate using the findings of the ISG's report to support their case. In this respect, the intervention by the government's Chief Scientific Advisor David

King served to intensify debate rather than contribute towards a final decision on the badger question.

The lack of stakeholder consensus was shown to limit the possibilities for constructive stakeholder dialogue. The various forums established to facilitate this were acknowledged by Defra officials to have been unsuccessful resulting in Defra moving to establish an advisory group more in keeping with an old-style expert panel conducting much of its work privately than an open forum for stakeholder participation. In bTB, therefore, a new governance approach has not been able to be adopted and a retreat to older governance forms observed.

Chapter seven used the dialectical model of policy networks (Marsh and Smith 2000) to explain changes in the animal health policy network and policy. The network was shown to be more open than the closed policy community that characterised MAFF. The relationships identified by Marsh and Smith, in particular the ones between network and context and network and outcomes were shown to be important in explaining network and policy change. The model was found to offer a useful tool with which to analyse animal health policy. The use of the model confirmed that the process of change was underway before Defra came into being. Most importantly, policy outcomes were shown to have had a significant effect upon the network.

Answering the questions

What then, in summary, are the answers to the research questions?

The first question was:

> Is Defra policy-making qualitatively different to that of MAFF? If so, how, and in what ways, do governance structures and processes reflect that difference?

The answer to this is broadly yes. New animal health policies, in particular the Animal Health and Welfare Strategy, emphasise new governance themes such as stakeholder participation, partnership working and the sharing of costs and responsibilities. The EIG represents a qualitatively different type of governance structure from anything seen when MAFF was the ministry with responsibility for animal health. In the case of bovine tuberculosis, however, a lack of stakeholder consensus on the general direction of policy for the disease has limited Defra's opportunities for new ways of working in keeping with the new governance approach. The exception to this was the public consultation on the proposal to cull badgers which yielded more responses than any other consultation. This was of limited value for Defra, however, as pressure groups whipped up supporters to submit responses, especially from those opposed to the idea of a cull. The Citizens' Panels, too, can be seen as a more developed form of public consultation and, as the comments from Defra official 2 quoted

in chapter six shows, the findings of this exercise were of considerable interest to Defra.

Defra has also demonstrated a willingness to transfer responsibilities to a range of non-state actors for aspects of animal health policy implementation. However, its desire to also transfer some of the costs of animal health policy to the farming industry has met with significant opposition. Presently the extent to which Defra will be successful in transferring costs and responsibilities remains unclear.

The second question, looking at the AHWS, was:

> How have the new governance structures created by the AHWS worked in practice? How do stakeholders participate in the policy process?

The EIG has been an innovative structure. Its meetings have been held in public and stakeholders have been encouraged to attend those meetings and have been given opportunities to contribute their comments before the group. The EIG itself has enjoyed some success in establishing an identity for itself and has sought to demonstrate its arms length distance from Defra by, for example, insisting on taking control of the process for establishing performance indicators for the group.

The EIG has worked in a manner designed to reach consensus. At the observed meetings no votes were ever taken, the chairman summed up what she saw as the sense of the meeting. The striving for consensus has meant that the EIG members have not taken up fixed, inflexible positions. Debates have sometimes been heated but the chairman has managed to express a sense of the meeting that appeared to satisfy all present. Stakeholders attending the meetings have also been largely restrained in the tone of their remarks. Only when bTB was discussed was it clear that no consensus existed or could be achieved.

On the bovine tuberculosis case study itself, the question was:

> Has Defra effectively deployed new governance measures to resolve the problems posed by competing interests and uncertain science to produce policy on bovine tuberculosis?

To this question the answer is largely no. Attempts to engage with stakeholders such as the TB forums were regarded as a failure by Defra officials and by participants (Interview Defra official 2). The large scale public consultation on badger culling and the associated Citizens' Panels served only to reiterate the lack of agreement on the way forward on this issue. Rather than resolving the problem, this exercise confirmed that it remained a problem. In addition, the public consultation and the Citizens' Panel exercises demonstrated that openness and participation also presented problems as well as opportunities.

The question of whether or not to cull badgers as part of any TB control strategy is a difficult one for Defra. The significant delay in arriving at a decision reflects a fear of alienating the farming industry from the wider animal health policy process. Bovine tuberculosis, and Defra's policy on the disease, remains the most likely cause of policy failure both for bTB and the wider AHWS if Defra cannot secure stakeholder engagement.

In the bTB case, Defra has preferred to fall back upon expert groups for advice. The TB Advisory Group cannot be seen as a new governance inspired stakeholder body but more an expert group. In addition, unlike the EIG which holds its meetings in public, the TB Advisory Group holds its meetings in private although the minutes of these meetings are published on the Defra website.

The ISG too is an expert body. The Randomised Badger Culling Trial began before Defra came into existence. Defra continued with the trial and the RBCT represented perhaps the best chance of arriving at a scientific solution to the problem. However, in using a cost-benefit approach the ISG attracted criticism from the Chief Scientific Advisor and from Lord Rooker, the minister for animal health. Farming unions too have disputed the findings of the ISG. Consequently, a solution to this problem based on natural science alone cannot, unsurprisingly, be found and the ISG's attempts to utilise a wider range of disciplines have attracted criticism for failing to adhere to 'science' as the basis of recommendations.

RECENT DEVELOPMENTS

Since the work for this research was concluded there have been recent developments in respect of both the AHWS and in bovine tuberculosis that are worthy of mention.

An e-mail sent to stakeholders on 5 September 2008 announced that a review, conducted by David Eves, a consultant and former Deputy Director of the Health and Safety Executive, was to take place into the future of the EIG. He would report in December 2008, with Defra making its decision on the future of the EIG in early 2009. The terms of reference for this review are:

> '1. Assess the group's performance, so far, in contributing to Defra's strategic objectives, reviewing its value for money, and identifying good practice and lessons for the future;
>
> 2. Assess the group's continuing relevance and role in the wider and evolving landscape of stakeholder bodies in farming and food, especially the forthcoming animal health and welfare Responsibility and Cost Sharing body; and
>
> 3. In that light, make recommendations for the future of the EIG' (E-mail sent to stakeholders 5.09.08).

The possibility exists, therefore, that in 2009 the EIG may be wound up and replaced by a wide range of stakeholder bodies with more limited objectives and areas of coverage. If that were to happen then there would no longer be a body with overall responsibility for overseeing the implementation of the AHWS. However, with the announcement of the review so recent, it is far too soon to know Defra's thinking on this. The fact of a review, though, possibly suggests that there is some disquiet within Defra over the way that the EIG has operated to date. Chapter five noted that a review of the animal health and welfare delivery landscape revealed a need for some greater control (Eves 2006). Possibly, the EIG will be found unable to demonstrate that control. The announcement of the review also confirms Defra's position as the dominant policy actor. Even when pursuing a new governance agenda the state, in the form of Defra, retains the power to review, expand, or close down an institution that it created.

Bovine tuberculosis

On 7 July 2008, the Secretary of State for Defra, Hilary Benn, made an announcement to the House of Commons about the government's plans for tackling bTB. In the statement the minister said that, 'Having listened carefully to a wide range of views … and having considered all the evidence, I have decided that while such a cull might work, it might also not work' (Ministerial statement 7 July 2008). Consequently, the minister announced that the government would not issue licences to farmers to cull badgers as part of its TB control policy in England. The decision is a devolved matter for Scotland,

Wales and Northern Ireland. As an alternative, vaccination would become the priority for government spending in this area with the aim of developing an effective vaccine for both badgers and cattle.

NFU reaction to this decision was strong. NFU president Peter Kendall announced that the NFU would immediately withdraw from Defra discussions on responsibility and cost sharing and would launch a legal challenge against the decision (*Farmers' Weekly Interactive* 8/07/08, *Farmers' Guardian* 8/07/08). The strength of the NFU reaction adds evidence to the argument that bTB remains the most likely cause of policy failure for the whole AHWS.

Both of these developments support, to an extent, the findings of the empirical research conducted into the two case studies. The EIG had been reasonably successful in bringing together stakeholders in support of the aims of the AHWS and developing a shared understanding of animal health problems. It had also worked quite well as a new governance institution. The review may lead to some fragmentation and specialisation of groups on the EIG model. As the announcement of the review stated, there are already plans for a separate body to oversee the responsibility and cost sharing agenda. The EIG itself had also set up sub-committees for responsibility and cost sharing and animal welfare delivery. This approach may be continued by the review, or an EIG-type body may remain to oversee the strategy as a whole.

The decision on badger culling was something of a surprise. As chapter six emphasised, Defra had sought not to rule out culling as an option with the

public consultation and the King Review both offering evidence in support of that proposition. Even in the ministerial statement announcing the decision, Mr Benn made it clear that 'we remain open to the possibility of revisiting this policy under exceptional circumstances or if new scientific evidence were to become available' (Ministerial statement 7 July 2008). The nature of the 'exceptional circumstances' was not made clear. Whether industry disengagement from the responsibility and cost sharing agenda would constitute such circumstances is, perhaps, unlikely, but not ruled out. However, the decision does suggest that stakeholder preferences can be overridden and that government, in this case Defra, remains the dominant policy actor within a network.

POSSIBILITIES FOR FUTURE RESEARCH

This research has argued that a new governance approach to animal health policy has been pursued by Defra but that it has not been uniformly practiced across the sector. Aspects of the AHWS, especially the EIG can be seen as reflecting new governance ideas to a considerable degree, whereas the approach with bTB has tended to retain control within Defra and used expert committees rather than stakeholder bodies to inform policy.

The research has provided many possibilities for future research. At a theoretical level, the dialectical model of policy networks (Marsh and Smith 2000) has been shown to be useful in framing analysis in this field and in

explaining network change over time. Research using this model in other policy areas is thus an attractive prospect.

Within animal health policy, continuing research to monitor the development of policy suggests itself. In particular, from chapter five, the idea of responsibility and cost sharing and its implementation offer a rich field for study. Whether the NFU will continue its boycott of discussions on the issue remains to be seen. With or without the NFU, however, responsibility and cost sharing represent a sea change in thinking about animal health. How Defra handles that change will be interesting to observe. The development of bTB policy now that a decision on a badger cull has been made also offers rich pickings. How far will Defra be able to maintain partnership working when a key partner rejects its decision on badgers?

Farm health planning was shown to be a key objective of the EIG in chapter five. One of the ideas behind farm health plans is to encourage regular contact between farmers and their vets and to practice farming in line with current ideas of good husbandry. In addition, there are various disease management practices that, if implemented, would reduce the incidence of that disease (e.g. Green et al 2007 on a mastitis protocol). However, best practice is not always followed. Researching the reasons for this may be a fruitful avenue of research with policy implications.

CONCLUSION

Reflecting upon the research project as a whole, there are some broad conclusions to be drawn. First, the decision not to proceed with a cull of badgers was a surprise given the lengths that Defra had gone to in order to keep that option open. I had not expected the ISG's final report to come out so strongly against a cull, but was certain that a cull, or at least a partial cull in some small areas, would be ordered once David King's report came out.

Second, the choice of methods was profitable. The Marsh and Smith model helped to provide some structure to the analysis of policy change. However, it was not without its problems. Some difficulty was experienced in deciding how to approach the analysis. For example, was new governance a structure or part of the wider context?

Interviews, especially with Defra officials, were particularly rewarding and delivered a lot of rich data. The willingness of officials to be interviewed may also, perhaps, be seen as a finding. The secretary of one official told me that they had been encouraged to talk to researchers. Another manifestation of Defra's open approach, perhaps?

Observations of the EIG meetings was also fruitful. Observing who were the most frequent speakers and watching as the group constructed meaning and struggled, at times, to find a consensual way forward were rewarding.

Taken together, the variety of methods chosen combined with using the seemingly contradictory analytical frameworks of interpretivism and the Marsh and Smith model of policy networks combined well. Each approach offered something specific. The interpretive approach allowed the stories of governance in practice to be told, at least in part. The case study chapters therefore contribute to our understanding of policy making by giving the perspectives of those intimately involved in the policy process. The policy network analysis gave the work some structure and explanatory potential. It highlighted the major reasons for network and policy change over the period covered by the project.

There can be little doubting the relevance of this research. Although it accounts for a small chunk of the overall government spending, animal health problems have punched above their weight in causing difficulties for government. Furthermore, Defra has been bold in its attempts to manage animal health policy with the new governance structures acting like laboratories for new ways to make policy in a differentiated polity in which the capacity of the state to manage alone no longer exists.

Although focussing on animal health policy, this study also suggests that policy making in agriculture more generally has been subjected to change over time. Within agriculture specifically, the European dimension has assumed much more significance. More generally, winding up MAFF ended the practice of having a specific department to deal with agriculture. Other policy areas have come to impact upon agriculture and these are reflected in Defra. First,

the environmental impact of agriculture has risen in significance as chapter four showed. As climate change continues to exercise policy makers, it may be anticipated that farming's contribution to greenhouse gas emissions may come under scrutiny in a way that so far has not occurred. Second, agriculture is no longer seen as being synonymous with 'rural.' Increasingly farming interests have to compete with other industries such as tourism. Demands for the right to roam suggest that agricultural interests can no longer expect to necessarily expect to get their way when their demands conflict with other rural interests and industries.

The bTB case study, in particular, highlighted the limitations for policy makers in seeking to arrive at decisions on the basis of, what they tend to call, 'the science.' Various problems confront the policy maker. There is the question of which scientific discipline to rely upon, for example. There is the question of what to do on occasions where different groups of scientists offer different advice that suggest different policy options. This was observed in this study both in the discussion of the 2001 FMD outbreak and in the question of whether or not to cull badgers to control bTB. In the former case different epidemiological models suggested different culling strategies while vets in the field had their own perspectives that took account of the particular local topology. In the bTB case groups of scientists could be found on both sides of the badger debate. Vets tended to argue for a cull, at least through the BVA, while ecologists focussed on the observed behaviour of the badgers to suggest that a cull would be of limited use. The RBCT - supposedly the 'definitive' experiment - yielded results that required considerations of cost and

practicability. This led David King, in his subsequent report, to suggest that the ISG had relied on considerations that were not scientific in coming to their conclusion.

If we consider policy problems such as climate change, GM food, energy policy, obesity, alcohol and drug policy, it can be seen that science alone cannot be expected to provide the answer. Questions of practicability, the legitimate interests of important stakeholders all have a role to play. Perhaps most importantly for politicians the level of public acceptability of any proposal is an important consideration. Lord Krebs suggested in a 2009 Distinguished Lecture at Nottingham Trent University that one of the reasons why tobacco is heavily taxed and its consumption controlled and limited while politicians rushed to oppose the Chief Medical Officer's advocacy of raising the price of alcohol was that only some 21% of British adults smoke while nearly 80% consume alcohol. It may be considered, therefore, that in policy areas with a scientific component, policy makers cannot simply pass on decision making to the scientists. Instead, a more mature understanding would see science as one of several inputs into the policy making process.

It is also useful to reflect upon what the network approach tells us about our understanding of policy making and new governance. Botterill (2005), using the example of Australian agricultural policy making, confirms the long held view that tight policy communities tend to lead to policy stability and that policy change is more likely in an environment of looser network structures. This suggests that the classification of the type of policy network in each

policy area is an important empirical question since it may give clues as to future policy stability. Furthermore, it may be that dialectical models work best in situations where significant policy or institutional change has occurred, as a way of understanding that change. This present study certainly suggests this. Hindmoor (2009) looked at another policy - the decision not to vaccinate during the 2001 FMD outbreak. He relied upon the idea of priming; that different actors have differential opportunities to promote their ideas to policy makers. He suggests that the NFU was in this position during the 2001 FMD outbreak. However, while priming may help to explain that particular decision, it does not explain the subsequent collapse of the NFU-MAFF centred closed policy community. The present study suggests that the dialectical approach is much better equipped to fully understand the process of network change over time. So while the network approach generally helps in understanding policy decisions, it may be that network change requires the rigors of the dialectical model.

This study can also be seen to make a contribution to debates about new governance. In particular it makes a contribution to the debate about the continued strength of the state relative to Rhodes' ideas of the differentiated polity model. Marsh et. al (2001) and Richards and Smith (2002) instead argue for what they term an asymmetric power model. That is, a model in which the state remains the dominant political actor. Changes in governance are acknowledged but, it is argued, that the core executive has adapted to this. 'At the heart of this adaptation has been the shared goal of ministers and civil

servants to protect their own status and power' (Richards and Smith 2002, p.271).

The state is seen by these authors as remaining the single most powerful political actor. Others have also shared this view. In a review of what he terms the Anglo-governance school, Marinetto (2003) acknowledges that the old Westminster model with its view of politics centred on ideas of a sovereign parliament is outdated. However, he is also critical of the idea of new governance theorists, such as Rhodes, who argue that the state has lost power as offering only 'a partial conception of the state' (Marinetto 2003, p.606). Instead, Marinetto argues that 'although government has been subject to restructuring, these reforms have tended to reinforce the ability of the central core to exert control' (Marinetto 2003, p.606).

What these authors, and this study, have shown is that the governance perspective is useful in understanding day to day behaviours within the network. However, within networks, the state remains the single most powerful actor by virtue of having the greatest resources at its disposal. Furthermore, the state can destroy new governance institutions just as readily as it can create them. This study has noted that Defra intends to review the future of the EIG. Similarly, in other policy areas we might try to identify where government has altered the institutional arrangements to favour particular interests or policy prescriptions.

Finally, therefore, to claim a simple shift from government to governance is perhaps to oversimplify the situation. It is better, perhaps, to see governance as just one of the ways in which government operates in order to secure its objectives. Marsh et al (2001) accept that while government may rely upon governance networks that include non-state actors for the delivery of services, these networks remain dependent upon government for things such as legitimacy, legislation and force which these non-state actors cannot provide (Marsh et al 2001, p.248).

Bache (2003) agrees that governance is used by government to get its way. Using the example of education policy he argues that the process of fragmentation of education has, in fact, increased government's control over policy. Indeed,

> 'The fragmentation of education delivery undermined the ability of existing powerful institutions, individual LEAs, to frustrate national policy objectives either through the pursuit of conflicting policy priorities or through inefficiency' (Bache 2003, p.312).

This study too, has shown how Defra has remained the single most powerful actor within the animal health policy network. It has also shown how, if governance measures cannot deliver effective policy, as was observed with bTB, then a revision to more traditional forms of policy control can be employed which can bypass the network and, ultimately, take a decision which is against the wishes of powerful members of the policy community. New

governance has secured a place as a valuable means of understanding policy making in Britain, but the abiding power of the state ought not to be underestimated.

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